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ABSTRACT

These proceedings consist of 14 papers some of which are followed by responses or discussant comments. The papers are: Thrifty Food Plan: New and Improved" (Cude, Walker); "Automated Teller Machines: Perceived Impact on Consumer Spending" (Greninger, Kitt, Hampton); "A Comparison of the Attitudes and Behaviors of Utah Men and Women in Their Roles as Primary Household Food Shoppers" (Langrehr, Langrehr); "Self-Employed Women's Use of Time" (Longstreth, Stafford, Mauldin); "A Demographic Profile of Investors in Nevada" (Zimmerman, Tripple); "The Norris Case: Implications and Applications of the Supreme Court Decision on Pension Plan Benefits" (Emberson); "Supporting Adult Volunteers as Non-Formal Educators" (Fong); "Evaluation of Economic Impact of Kentucky State University's Family Development and Management Program" (Jeffiers); "Financial Management Practices of Remarried Families" (Lown); "Time Used for Household Work: Comparisons for Farm, Rural Nonfarm, and Urban Women" (Meiners, Olson); "An Investigation of Economic and Other Factors Influencing Rural Families Energy Use Decisions" (Pedersen); "Using Microcomputers in Family Economics and Home Management" (Wesswick); "The Effect of Structural Modification on Energy Conservation Behaviors" (Beck); and "Education and Earnings of Young Men: Effects of Living in a Single-Parent Family" (Krein). An addendum contains four additional papers: "A Path Approach to Income Utility and Distribution in the Household" (Berry); "Household Equipment--An Anachronism?" (Burton); "Economic Pressures on Women: Update" (Drennen, Makela); and "A Comparison of Two Personal Financial Management Programs--'Dollars and Sense' and 'Home Accountant Plus' for the IBM PC" (Onodera). (YLB)

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THE THRIFTY FOOD PLAN: NEW AND IMPROVED

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Abstract

The U.S. Department of Agriculture (USDA) recently revised its Thrifty Food Plan. This paper reviews the reasons for the revision and the changes made. The allocation of the costs to various food groups is examined and guidelines for using the plan are offered.

Results indicate that is is possible to purchase the foods in the plan on a food stamp allotment, although the allocation of expenditures to various food groups differs somewhat from USDA's recommendation.

The U.S. Department of Agriculture (USDA) released its revision of the Thrifty Food Plan in July 1983 [5]. The Thrifty Food Plan (TFP) is the least costly of the four USDA food plans and serves as the basis for food stamp allotments. Educators preparing students for careers serving low-income families and professionals who are currently working with these families should be knowledgeable about the revised plan. This paper will: 1) review reasons for the revision, 2) outline the changes, 3) use price data from two supermarkets to examine the allocation of costs to various food groups in the revised TFP, and 4) offer guidelines for use of the new plan.

Reasons for the Revision of the TFP

The TFP in use before the most recent revision was developed in 1975. This 1975 TFP was frequently the subject of criticism which focused on four areas of change making the 1975 plan outdated [8,15]. The four areas were:

1. Changes in dietary standards. Although the Recommended Dietary Allowances (RDA) were updated in 1980, the 1975 TFP was based on 1974 RDA's. The 1980 RDA's included higher levels for several nutrients and the 1975 TFP did not meet these standards. Additionally, new dietary goals for controlling the levels of fat, cholesterol, and sodium were set after the development of the 1975 TFP. Two research studies [4,9] demonstrated that the sample menus published by USDA for use by families following the TFP had serious nutritional deficiencies.
2. Changes in nutrient values. The nutrient values of some foods such as enriched breads and flour have changed since 1975. Additional information on the nutrient content of some foods has also become available.
3. Changes in food consumption patterns. The 1975 TFP was based on eating patterns of low-income families in the 1965-66 Consumer Expenditure Surveys. Data from the 1977-78 Nationwide Food Consumption Survey indicated that eating habits have changed significantly. For example, consumption of sugars, eggs, and dry beans has declined while larger amounts of soft drinks, citrus fruits, and dark green vegetables are being consumed [8].
4. Changes in prices. Relative prices of specific foods have changed since 1975. To illustrate, the Consumer Price Index for bacon increased by 66 percent from 1974 to 1982 but the increase for chicken was only 16 percent [5,6]. Research based on limited data [4,10] demonstrated that, at least in certain locations, the actual cost of the foods in the 1975 TFP exceeded USDA's estimate.

Changes Made in the Revision of the Plan

In response to these four changes, the 1983 TFP differs in many ways from the 1975 TFP. A summary of the changes is shown in Figure 1.

The 1983 TFP provides for several nutrients and other dietary factors not taken into consideration in the development of the 1975 TFP. Meeting dietary standards for vitamin E, folacin, zinc, phosphorus, and vitamin B_{12} was a goal in 1983 but not in 1975. Additionally, the percent of energy from fat was limited to 35 percent in the 1983 plan compared to 40 in the 1975 plan. The level of caloric sweeteners, sodium, and cholesterol was controlled at moderate levels in the new plan.

The 15 food groups in the 1975 TFP were expanded to 31 in 1983. The reason for the increase was to account for the greater availability of commercially prepared products and for foods with high and low content of certain dietary substances not considered in the development of the 1975 TFP. For example, while only four categories of fruits and vegetables (dark green, deep yellow vegetables; citrus fruits, tomatoes; potatoes; others) were used in the 1975 TFP, there are six in the 1983 TFP (potatoes; high-nutrient vegetables; vegetable mixtures; vitamin C rich fruit; other fruits; other vegetables). The 1983 food groups include three categories to encompass commercially prepared products: condiments, grain mixtures (e.g., pizza), and meat mixtures (soups, pot pies, etc.).

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Figure 1. Changes Made in the Revision of the 1975 TFP.

	1975 TFP	1983 TFP
Dietary Standards	Consideration given to 11 nutrients	All nutrients in the 1975 TFP were included plus 5 additional ones.
	Fat limited to 40% of calories.	Fat limited to 35% of calories. Cholesterol, caloric sweeteners, and sodium controlled at moderate levels.
Food Groups	15	31
Allowance for Discard of Edible Food	5%	5%
Sex-Age Categories	14	11
Food Consumption Survey Used	1965-66	1977-78

Compared with the 1975 TFP, the 1983 plan includes more cereal, flour, rice, pasta, dry beans, nuts, meat, poultry, and fish and less fats, oils, sugar, sweets, and commercially prepared bakery products. These alterations reflect changes in both nutritional standards and consumption patterns. Prior to selecting specific foods for each plan, USDA examined consumption patterns to identify nutritional shortcomings. For example, in the most recent survey, nutritional deficiencies existed in the consumption patterns of some sex-age categories for calcium, magnesium, iron, folacin, and zinc. The fat content of the majority of the survey families' diets exceeded USDA's goal of 35 percent. Adjustments in consumption patterns were then made to correct nutritional shortcomings in a manner which would reflect the low cost level of the plan. To illustrate, the Thrifty plan includes 91 percent more dry beans, peas, and nuts and 37 percent less meat, poultry, and fish than was consumed by the households at that cost level in the survey [12]. No change was made in the five percent allowance for discard of edible food.

Three sex-age categories were eliminated in the 1983 TFP and the ages for certain categories were changed. Plans for the child under one year and pregnant and lactating women were dropped. The categories for older men and women were changed from 55 years and over to 51 years and over to conform to RDA categories [12].

With the numerous changes in foods found in the 1983 TFP, one might expect changes in the allocation of expenditures to different food groups. Additionally, although the revised plan contains larger amounts of meats, whole grain breads and cereals, and other foods generally considered to be relatively expensive, USDA claims that the cost of the 1983 TFP is approximately the same as that of the 1975 TFP [8]. The actual cost level of both plans as well as the allocation of costs to different food groups were examined in this research.

Significance of the TFP

The cost of the TFP is significant because it serves as the basis for Food Stamp allotments. The Food Stamp Act of 1977 (Public Law 95-113, 91 Stat. 958) provides that maximum allotments be based on the monthly cost of the TFP for a four person family (man and woman, age 20 to 50, and two children, ages 6 to 8 and 9 to 11). The allotments vary based on differences in family size. To account for inflation, annual adjustments in allotments are made on October 1 using the cost of the plan on the preceding June 30. The adjustment is based on the increase in the cost of the plan from the previous year, minus one percent and rounded down to the nearest dollar increment [1,2]. The October 1, 1984 adjustment will be the first to be based on the newly revised Thrifty Food Plan [15, p. 34702]. Consequently, the actual cost level of the 1983 plan has important implications.

Procedures and Results

The sample menus published by USDA and the accompanying market lists for the 1983 [16] and 1974 [14] Thrifty Food Plans were used. Both market orders list specific foods to be purchased along with specific quantities. The sample family for the 1975 TFP was an adult male and female and two children, ages 6 to 8 and 9 to 11; for the 1983 TFP the sample family is an adult female with three children, ages 3 to 5, 6 to 8, and 12 to 15.

Two trained surveyors priced the foods on the market orders (including beverages, spices, and condiments) in two stores. One was a large national chain supermarket located in Carbondale, Illinois (population 30,000). The second was affiliated with a regional chain in a rural southern Illinois community (population, 970). Prices for the 1975 TFP were collected in March

TABLE 1. Average Monthly Expenditures for the 1975 and 1983 Thrifty Food Plans.

Food Groups	USDA Recommendation	1975 TFP Urban Total	1975 TFP Urban Percent	1975 TFP Rural Total	1975 TFP Rural Percent	1983 TFP Urban Total	1983 TFP Urban Percent	1983 TFP Rural Total	1983 TFP Rural Percent
Meat, poultry, fish	28%	$ 40.46	22%	$ 42.11	18%	$ 56.22	29%	$ 61.76	26%
Vegetables, fruits	23	46.29	25	50.72	22	57.12	29	59.58	26
Grain products	20	39.20	22	64.18	28	32.08	16	49.14	21
Milk, milk products	17	31.02	17	43.61	19	28.97	15	37.73	16
Fats, sweets, beverages	7	18.53	10	21.87	9	14.89	8	18.59	8
Dry beans, peas	5	6.79	4	8.53	4	6.75	3	6.76	3
Total	100%	$182.29	100%	$231.02	100%	$196.03	100%	$233.56	100%
Spices, condiments	--	3.10	--	3.80	--	2.46	--	2.83	--
Total	--	$185.39	--	$234.82	--	$198.49	--	$236.39	--

1983 and for the 1983 TFP in October 1983.[3] All items (excluding institutional sizes) were unit priced assuming no size or brand preferences.

Since not all items needed to be replaced each period, grocery expenditures were computed for each market order period.[4] Monthly expenditures for all foods as well as for each of the six food groups were computed for a six month period and averaged to allow comparison with the monthly food stamp allotment. Results are shown in Table 1 along with the expenditure pattern recommended by USDA [11] to achieve an economical and nutritionally balanced diet.

The current maximum food stamp allotment for a family of four is $253. The average expenditure at the urban store ($198.49) for the 1983 TFP was $54.41 below the maximum and $67.61 below for the 1975 TFP. Expenditures at the rural store (at $236.39 and $234.82) were below the maximum allotment for both plans, although more than 19 percent higher than at the urban store. Spices and condiments increased the cost of the 1983 TFP by an average of less than $3.

Looking first at the 1983 TFP, the largest proportion of total expenditures was for meat, poultry, and fish and fruits and vegetables at both the urban (29%) and rural (26%) stores. The remaining categories are listed in Table 1 in descending order of magnitude. The largest differences in expenditures for individual food groups between the two stores were for grain products and milk and milk products. Costs for these two food groups at the rural store were considerably higher than at the urban store.

Expenditure allocations to the different food groups at the rural store for the 1983 TFP conformed fairly closely to the recommended pattern. Exceptions were vegetables and fruits, above the recommendation, and the meat category, below the recommendation. At the urban store expenditures as a percent of the total were above the recommended level for vegetables and fruits and below USDA's recommendation for grains in the 1983 TFP. Thus, although the total average expenditure was below the maximum allotment at both stores, expenditures as a percent of the total varied from the recommended pattern for some food groups.

Comparing the allocation of expenditures across the two plan provides insights into their differences. Compared to the 1975 TFP, the percentage of total expenditures increased for meats and fruits and vegetables in the 1983 TFP. In contrast, the percentage decreased for grain products, milk and milk products, and fats, sweets, and beverages. A large proportion of the decreased expenditures for grain products in the 1983 TFP is due to the limited number of relatively expensive mixes and commercially prepared bakery products other than bread (such as doughnuts, cookies, etc.)

[3] "Since the CPI for food decreased by .3 percent during the five month period, no adjustments were made for the relatively minor effects of inflation.

[4] Since the 1975 market order was for 10 days and the 1983 market was for 7 days, two additional days' menus were randomly assigned to each of the six months for the revised plan to increase the total number of days in a four week period from 28 to 30. This made direct comparison between the two plans possible.

included in the sample menus. These products accounted for over 55 percent of the expenditures in the grain group in the 1975 TFP compared to less than 30 percent in the revised plan. The decrease in the allocation of expenditures to milk and milk products at both stores is due largely to the substitution of a relatively inexpensive milk product (cottage cheese) in the 1983 sample menus for a more expensive milk product (ice milk) in the 1975 sample menus.

Guidelines for Use of the 1983 Thrifty Food Plan

The revision of the Thrifty Food Plan has important implications for professionals using the plan to make food budget recommendations. However, prior to identifying these, the assumptions that remained unchanged in the revision will be reviewed.

As in the 1975 TFP, several basic assumptions underlie the 1983 plan. Discard of edible food cannot exceed 5 percent [8,22], although the national average is estimated at 25 to 30 percent [13]. Some changes in the foods purchased may be necessary for families whose food consumption patterns differ from that assumed in the plan if they are to achieve the cost estimated by USDA. All costs are for foods purchased or produced at home and prepared at home. The plan does not allow for the purchase of commercially prepared foods at restaurants, cafeterias, etc. It assumes that the person responsible for food preparation has time for that activity and is skilled at stretching small amounts of the more expensive foods and making use of leftovers.

The plan allows for an energy level at the midpoint of the 1980 RDA range, which would not be adequate for persons engaged in strenuous physical activity. The plan would be nutritionally inadequate for pregnant and lactating women and others with special dietary needs [7].

Economies of scale are assumed in USDA's estimate of the cost of the 1983 plan [3,8]. Compared to a four person household, costs for families smaller than four are assumed to be higher per person and lower for families larger than four. Costs are also based on average prices. As illustrated in this research, costs may be higher for consumers who shop at rural stores as well as inner city stores with higher prices and stores with few generic or store brands. Costs may also be higher for consumers who use a brand preference strategy, limit sizes purchased because of transportation or storage constraints, and those who are not skilled at using unit pricing.

In making food budget recommendations, users should be aware that the nutritional quality of the diet has improved while the amount of time necessary for preparation has also increased. The increased time is due to the limited amounts of commercially prepared bakery products and mixes and the almost total exclusion of convenience foods in the new sample menus.

In previous research [17] the authors compared USDA sample menus for the 1975 and 1983 TFP's, placing each menu item into one of five categories of time intensity required for preparation. In the 1975 TFP, 47 percent of the menu items were in the category requiring the least amount of time (relatively simple tasks such as serving canned foods, toasting bread) compared to 37.5 percent of the menu items in the 1983 sample menus. Just under 14 percent of the 1975 menu items were in the two categories requiring the most time for preparation compared to 20 percent of the 1983 menu items. Thus, to achieve the cost level of the 1983 TFP as well as the nutritional benefits, more time in preparation and better shopping skills may be necessary than was true of the 1975 TFP.

Furthermore, the 1983 sample menus were developed for a sample family consisting of one adult and three children. The nutritional needs of the traditional sample family (two adults and two children) would be higher for energy and all nutrients except calcium, phosphorus, and iron [7]. Yet USDA offers no recommendations for adapting the 1983 sample menus for families with sex-age compositions differing from the sample family.

In summary, many of the assumptions underlying the 1975 TFP remain applicable to the 1983 plan. However, the 1983 TFP was developed in light of changed consumption patterns and dietary goals. Although this research, conducted in only two stores, indicates that the cost of the plan remains below the maximum food stamp allotment, it appears that, compared to the 1975 TFP, a greater amount of time may be required for food preparation. Improved shopping and food management skills also may be necessary to achieve the prescribed cost level of the 1983 TFP.

A final reminder is appropriate. The cost of the TFP is an average, not what families at a food stamp budget level "should" be spending for food. Many factors, including individual health or physical conditions, ethnic or regional food consumption patterns, access to food at nationally average prices, and comparative shopping skills, can explain why a family's expenditures differ from the TFP cost level. Professionals cannot effectively use the plan without taking these factors into consideration. Increased knowledge of nutrition, comparative shopping, and food management will be necessary for some low-income families if they are to achieve the low cost of the Thrifty Food Plan.

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AUTOMATED TELLER MACHINES: PERCEIVED IMPACT ON CONSUMER SPENDING

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Abstract

The objectives of this study were to investigate the perceived impact of automated teller machine (ATM) usage on spending and to identify the characteristics of consumers who reported that ATMs had affected their spending. Data were from a randomly-drawn sample which included 1,051 ATM users in Austin, Texas. Although most of the respondents reported that ATMs had no impact on their spending, 35 percent reported that ATMs resulted in increased spending. Only four percent reported that ATMs resulted in decreased spending. Stepwise discriminant analysis using demographic, financial management and ATM usage variables accurately classified 55 and 50 percent of the analysis and test subsamples, respectively. Respondents who perceived that ATMs had influenced their spending were more likely to report dissatisfaction with their financial management, make more frequent withdrawals from ATMs, be younger and have lower incomes than those who perceived that ATMs had no impact on their spending.

Introduction

Teller-related functions have been one of the first consumer service areas in banking to experience large-scale automation. Automated teller machine (ATM) terminals have been designed so that consumers can perform financial transactions, including deposits, withdrawals, transfers and balance queries, without interfacing with human personnel. The consumer performs the above transactions via a plastic ATM card and a personal identification number (PIN) which is designed to control access to the account by other parties.

ATMs were initially introduced on or near the premises of existing financial institutions as a way of minimizing lines and extending service hours. Federal and state regulations actually delayed widespread availability of ATMs by placing constraints on the ability of financial institutions to form networks and to locate units off premises. Thus, the requisite economies of scale that would enable growth were not realized. More recently, however, legislative changes have facilitated the adoption of ATMs. These changes include the Depository Institutions Deregulation and Monetary Control Act of 1980 which blurred the distinctions between financial institutions such as banks, savings and loans and credit unions. This legislation resulted in increased competition among the institutions with the point of access, or ATM, being an important vehicle for increasing market share. According to Kane (7, pp. 355-356), another factor contributing to recent ATM growth is that the financial industry developed innovative practices which circumvented specific regulations and decreased the general effectiveness of regulations. One such innovation was the creation of bank holding companies which facilitated growth of ATMs through network formation.

Consumer acceptance of ATMs was slow during the 1970's (1, 2, 3, 11). Much of the literature regarding ATMs was marketing-oriented and focused on the status, problems and cost effectiveness of the machines from the industry's perspective. Consumer-oriented literature has tended to describe the availability of the equipment, its various functions and the advantages and disadvantages of its use (5). Under contract from the National Science Foundation, Arthur D. Little (8) did in-depth interviews with panels of female consumers from three income categories. Although all income groups saw the machines as advantageous in terms of their convenience and as a source of emergency funds, females in the middle income group appeared quite enthusiastic about using ATMs but were indifferent toward cash dispensing machines. The low income panel was concerned that ATMs would cause overspending and, therefore, preferred machines which did not dispense cash. Higher income women expressed general resistance towards banks which carried over to their acceptance of ATMs as well. The researchers theorized that higher income people would be early users of ATMs, however, because of their ability to understand the cost effectiveness of the equipment and to effectively utilize the new technology in handling their personal financial matters. All three panels expressed concern about the possible loss of control over their financial dealings, the impersonal nature of the machines and the possibility for human and machine errors.

Mears, McCarty and Osborn (9) investigated consumers' perceptions of three aspects of ATMs -- personalized relationships, convenience and security. Three hundred randomly-chosen interviews were conducted in the homes of respondents in a large, midwestern city in 1976. Only 30 percent of the sample had used ATMs; 51 percent reported they would use such machines infrequently or never. Young female respondents tended to desire convenient locations near work and shopping malls and access from their automobiles. Common reasons for lack of acceptance among the respondents included difficult and impersonal operations and personal safety concerns. Respondents also mentioned the potential for machine and individual errors as well as the tendency to overspend as reasons for not using the machines.

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Only 12 percent of the sample felt the machines were problem free. From their analysis, these researchers concluded that consumers were not yet willing to trade personalized service for greater convenience and that security issues were barriers to ATM acceptance. This emphasis on security is interesting given that Waldron and Ball (13, pp. 48-49) cite surveys of bank customers in Wisconsin and New York where more than one-half of the respondents had their PIN written directly on their ATM card or on something carried within their wallets.

A pilot study by Hampton, Kitt and Greninger (4) which utilized a convenience sample reported several significant correlates with perceived impact of ATM usage on spending. Younger respondents were more likely to report increased spending with ATM usage than older respondents. Frequency of use of ATMs for withdrawals, transfers and balance inquiries as well as frequency of use at grocery stores and shopping malls were significantly related to perceptions of increased spending due to ATM usage.

Research Design and Hypotheses

In view of previous findings that consumers were concerned that ATMs might encourage increased spending, the present study was designed to more fully explore this financial management issue. The objectives were to investigate the perceived impact of ATM usage on spending and to identify the characteristics of consumers who expressed concern, especially with regard to increased spending.

Based on findings from the earlier pilot study, it was hypothesized that perceived impact of ATM usage on spending would be a function of demographic variables, financial management practices and the character of ATM use. More specifically, it was expected that the perception of increased spending related to ATM use would be more likely among younger than among older consumers. Since the Arthur D. Little study indicated that the lower income housewives expressed considerable concern about potential overspending with ATMs, it was hypothesized that lower income respondents might be more likely to perceive increased spending as a result of ATM use. Those respondents who perceived increased spending with ATM use were also expected to report less satisfaction with their personal financial management due to the lack-of-control factor mentioned in Arthur D. Little study. Those respondents were also thought to be more spontaneous in their spending patterns and less likely to plan ahead with regard to financial management. Therefore, they were expected to perform financial tasks just before they were needed or in what might be called a more crisis-oriented mode than those respondents who perceived no effect from ATMs on spending. In addition, respondents perceiving increased spending were expected to use ATMs to withdraw funds and check account balances and to use ATMs at convenient shopping locations such as grocery stores and malls more frequently than those who perceived no effect from ATMs on spending.

Methodology

Sample

Data for this study were collected by telephone interviews during Fall, 1982. Telephone numbers were selected randomly from a current Austin, Texas telephone directory. The survey instrument used for the telephone interviews included questions about demographic characteristics, financial management practices, ATM usage and concerns, and knowledge regarding federal protective legislation pertaining to ATMs. The instrument was pretested and refined to eliminate problems and clarify wording. At least three attempts were made at various times of the day to reach residents at the randomly-selected telephone numbers. If the person was not reached or refused to participate, a substitute number which had been randomly drawn was used. The overall participation rate was 54 percent, with 35 percent not being reached and 11 percent refusing to participate. Conducting the interviews during the Fall from a telephone directory that was issued the previous December accounted for some of the difficulty encountered in reaching respondents. The total sample for the overall research project involving both ATM users and nonusers included 2,466 respondents who were 18 years of age or older. The analysis for this study regarding impact on spending was restricted to the 43 percent of the overall sample, or 1,051 respondents, who indicated they were ATM users.

Data Analysis

Analysis of the survey data included frequencies, means and medians to describe the demographic profile of ATM users, their financial management practices and characteristics of ATM use. Stepwise discriminant analysis was employed to determine the effectiveness of the specific variables in predicting the perceived impact of ATMs on spending among the respondents. Discriminant analysis is designed to "classify objects, by a set of independent variables, into one or more mutually exclusive and exhaustive categories" (10, p. 156). To accomplish this, each respondent's discriminant score is calculated as a linear function of the independent variables and then compared to the actual grouped mean scores of the respondents for the various categories of the dependent variable. The less variance there is between a respondent's discriminant score and a group's mean score, the greater the probability that the respondent will be classified in that particular group. In order to lessen the upward classification bias which results when the same data are used to construct and then to test the model, a special feature of the BMDP7M computer program (6, 519-537) was used. This feature is a subroutine that randomly splits the data base into two subsamples. The first subsample was then used to analyze or construct the discriminant model while the second was used as a separate test of the discriminant model.

Dependent Variable

Answers given by respondents to two consecutive questions were combined to form the dependent variable, perceived impact of ATM use on spending. These questions were as follows:

1. Has using automated teller machines affected your total spending?
2. If yes, do you spend more or less as a result of using automated teller machines?

Respondents who answered "no" to the first question were coded as 1 which indicated no impact. Those who answered "less" to the second question were coded as 0 while those who answered "more" were coded as 2.

Independent Variables

Potential variables for the discriminant analysis were chosen on the basis of previous research findings and on a priori grounds. One-way analysis of variance was run on the dependent variable with continuous variables such as age and income. In the case of categorical variables such as sex and occupation, Chi squares were calculated on the dependent variable. Based on this initial analysis, those variables which did not approach statistical significance were eliminated from the discriminant model. Variables eliminated at this point included sex, number of times per week ATMs were used to transfer money between accounts, number of times per week ATMs were used at airports, and method used to keep track of ATM transactions. Whether or not the respondent was charged for ATM usage and kept track of ATM transactions were also eliminated at this stage of the analysis.

A few of the independent variables included in the stepwise discriminant analysis need additional explanation. The first is a measure of knowledge of federal ATM legislation which was based on respondents' answers to the following hypothetical questions:

1. Jack had $700 in this account when his automated teller machine card was stolen. If the thief withdraws all $700 from the account, how much of the $700 can Jack lose?
2. Does the amount of money Jack stands to lose change depending on how long it takes him to report the stolen card?

Respondents were classified as incorrect in their knowledge and assigned a code of 1 if they answered "no" to the second question or "yes" to the second question and gave a value other than $50, $500 or $700 in response to the first question. Correct responses were classified as those who responded "yes" to the second question and gave either $50, $500 or $700 in response to the first question; these respondents were assigned a code of 3. Those who said they did not know the answer to the first and/or second question were classified as "don't know" and assigned a code of 2.

A scale of overall concern regarding adverse events potentially involved in ATM usage was created by summing the answers given to three questions regarding the level of concern respondents had about (1) errors made when using ATMs, (2) lost or stolen ATM cards, and (3) personal safety when using ATMs. Responses to these questions were on a three-point scale with 0 = not at all concerned, 1 = moderately concerned and 2 = very concerned. Thus, the highest possible score on the scale would be 6 while the lowest score would be 0. The concern scale's alpha, which measures the internal consistency of scale items, was 0.70. Concern about the impersonal nature of ATMs was excluded from this scale because inclusion of this variable reduced the alpha to 0.56. Concern about the impersonal nature of ATMs was included as a separate variable in the analysis.

Dummy variables were utilized for the following three categorical variables: occupation, method of performing financial management tasks and knowledge of federal ATM legislation. It is important to remember that the findings with regard to these variables must be interpreted relative to the control category. The respective control categories for these three independent variables were as follows: blue collar occupacion, respondents who said their management style varied according to the situation and respondents who admitted they did not know the answer to the question about federal ATM liability limitations.

Results

Demographic and Financial Management Variables

The ATM users in this study were generally younger, better educated, higher income, more likely to be male and more likely to be single than the area population in general. All comparison statistics for the general population were derived from Summary Tape File 3A of the U.S. Census of Population and Housing (12). The users mean age of 31 years compares with a mean age of 35 for the total sample of ATM users and nonusers and 37 for area residents over age 17 in 1980. There were somewhat more males in the user sample (52 percent) than in the total sample or in the area's population (47 and 49 percent, respectively). Single respondents comprised a somewhat higher proportion of the user sample than of the total sample or of the area in general; these percentages were 56, 49 and 52, respectively. The majority of the ATM users had at least some college education with 39 percent having completed at least one college degree. The relatively high education level of the users was similar to that of the total sample but approximately two years higher than that of the area's adult population. Median family income for the ATM users approached $25,000 and was about $3,000 higher than that of the total sample. The median income for area families in 1979, or three years prior to the study, was $19,531.

The ATM users in this study were generally satisfied with their personal financial management as indicated by their mean score of 0.6 on a scale where "very satisfied" was coded as 0 and "somewhat satisfied" was coded a 1. Only 10

percent were "not at all satisfied" with their personal financial management. The mean time spent on family financial management tasks by the respondents, and their spouses in the case of married couples, was 82 minutes per week. These tasks included paying bills, balancing checkbooks, budgeting, keeping records and making financial decisions on purchases and investments. In fact, 20 percent of the respondents reported spending less than 30 minutes per week on such tasks. One-half indicated their usual method of performing financial tasks was in a regular, maintenance-oriented style, whereas 27 percent indicated that tasks generally got done just before they were needed. The mean number of times per week that each respondent charged purchases with credit cards was 1.5.

ATM Variables

The mean length of time that respondents had used ATMs was approximately 1.5 years. This period of time coincided quite closely with the date when enabling legislation went into effect allowing financial institutions to install off-premise ATMs on a shared basis. Prior to this time, off-site ATMs were not allowed in Texas due to restrictions on branch banking. Residents voted to change the state constitution in 1980 in order to provide for the convenience of ATMs located in off-site locations such as grocery stores, shopping malls and airports.

The majority of the respondents (61 percent) felt that using ATMs had not affected their overall spending. Thirty-five percent, however, perceived that their use of ATMs has resulted in their spending more than they otherwise would have spent. Only four percent felt that usage of ATMs had resulted in their spending less money.

Withdrawals from ATMs were made with a mean frequency of 1.7 times per week; 10 percent of the sample reported they made four or more withdrawals each week. The mean amount withdrawn per transaction was approximately $30 and the modal amount was $20. Balances were checked an average of once a week, with 10 percent of the respondents reporting they checked their balances at least three times per week. The majority of the respondents (82 percent) indicated that they maintained personal records of ATM use to check against statements from their financial institutions. The most common responses were that records were kept in their checkbooks or that receipts and stubs from ATM transactions were retained. The remaining 18 percent of the sample indicated that the bank kept their records or that they were not keeping personal records. Usage of ATMs at financial institutions and grocery stores were similar in terms of frequency per week, with the respective means being 0.8 and 0.7. Machines located in shopping malls were used on average a little less frequently, 0.5 times per week.

Relatively accurate knowledge of federal ATM legislation as measured by the hypothetical questions pertaining to liability exposure was demonstrated by 39 percent of the respondents. Incorrect responses were given by a somewhat smaller proportion of the sample (34 percent); 27 percent indicated that they did not know the correct answer to the liability exposure question. Concern was greater among respondents regarding errors and lost or stolen cards than for personal safety when using ATMs. The mean responses for these respective areas of concern were 0.76, 0.75, and 0.68 on a response scale which ranged from 0 through 2. Respondents expressed much less concern about the impersonal nature of using ATMs. The mean in this case was only 0.15, with 88 percent of the respondents saying they were not at all concerned about the impersonal aspects of dealing with machines instead of people.

Discriminant Analysis

The results of the stepwise discriminant analysis including group means for the three response categories, F scores at the first and last steps of the analysis and Canonical coefficients are presented in Table 1. The most important variable in predicting the perceived impact of ATMs on spending was the respondent's satisfaction level with his/her personal financial management. As expected, respondents who perceived increased spending with ATMs were less satisfied with their financial management than those who perceived no effect on spending from ATM use. However, respondents who perceived that ATMs resulted in decreased spending were also less satisfied with their financial management than those who perceived no effect on spending. Frequency of ATM withdrawals per week added significantly to the equation's ability to discriminate between perceptions about the influence of ATMs on spending. As hypothesized, those who perceived that ATM use contributed to increased spending made more frequent withdrawals at ATMs than those who perceived no effect on spending -- 2.3 versus 1.5 per week, respectively. What was not expected, however, was that respondents who perceived decreased spending as a result of ATMs made 2.2 withdrawals per week or approximately the same number as those who perceived increased spending from ATMs.

Two demographic variables, age and income, contributed to the equation's discriminative power. As had been hypothesized, respondents who perceived increased spending with ATM use were younger than those who perceived no effect on spending; the respective group means were 27.3 and 32.2 years. The mean age of the respondents who perceived decreased spending with ATM use was 30.4 falling in between the averages of the other two groups. As expected, those who perceived increased spending with ATM use had considerably lower family incomes on average than those who perceived no impact on spending. This group's mean income was $19,744 or about $7,000 less than that for the respondents who perceived no effect on spending with ATM use. The respondents who perceived decreased spending with ATM use, however, averaged only $13,824 in annual family income.

Knowledge of federal ATM legislation contributed to the equation's ability to discriminate among spending perceptions in an interesting way. Those who reported that they spent less with ATMs were more likely to give inaccurate answers to

TABLE 1. Stepwise Discriminant Analysis to Differentiate the Perceived Impact of ATM Usage on Spending, Analysis Subsample

Independent variables[a]	Group Means			F_o[b]	F_n[c]	Canonical Coefficients	
	Spend Less n=17	Spend Same n=219	Spend More n=156			Function 1[d]	Function 2[e]
Satisfaction with personal financial management	.8	.4	.8	19.43***	13.07***	.99	-.16
Times per week make withdrawals at ATMs	2.2	1.5	2.3	11.77***	7.22***	.30	.01
Age	30.4	32.2	27.3	12.53***	6.73**	-.04	.04
Income	$13,824	$26,644	$19,744	7.11***	4.81**	-.00	-.00
Incorrect knowledge of federal ATM legislation	.6	--[f]	--[f]	4.66**	4.40*	.09	1.13
Times per week make deposits at ATMs	.9	.5	.4	2.61	3.78*		
Times per week use ATMs at shopping malls	1.1	.4	.6	5.00**	2.65		
Correct knowledge of federal ATM legislation	.2	.1	.3	1.99	2.56		
Number of organizations to which respondent belongs	1.8	1.3	1.0	3.79*	2.47		
Sales/clerical occupation	-.1	.1	.2	2.22	1.60		
Concerned with impersonal nature of ATMs	.2	.1	.2	1.46	1.48		
Education	13.9	14.9	14.3	4.48*	1.36		
Minutes per week spent on financial management	97.9	86.6	72.3	2.82	1.16		
Amount usually withdrawn from ATMs	$30	$28	$26	1.32	1.14		
Not employed	.1	--[f]	--[f]	1.20	1.11		
Length of ATM usage in years	1.8	1.6	1.4	2.23	1.08		
Regular maintenance management style	.5	.4	.2	3.78*	1.03		
Student	.2	.1	.2	5.55**	.87		
Times per week use credit cards	1.1	1.6	1.2	2.39	.57		
Times per week use ATMs at financial institutions	.9	.7	1.0	2.87	.39		
Times per week check account balance at ATMs	1.4	.9	1.3	5.19**	.36		
Professional, technical or managerial occupation	.4	.3	.2	1.61	.33		
Crisis management style	-.1	--[f]	.1	.35	.23		
Marital status	.4	.5	.3	7.13***	.20		
Times per week use ATMs at grocery stores	.8	.7	.8	.85	.14		
ATM concern scale score	2.5	2.2	2.3	.27	.12		
Children	.7	.6	.8	7.95***	.11		
Spouse's education	10.5	11.5	10.4	4.34*	.03		

[a] Coding for independent variables was omitted due to space limitations but is available from the authors.
[b] F at step 0, based on one-way analysis of variance, for each independent variable.
[c] F at last step.
[d] Function 1 had an Eigen value of .22, accounting for 87 percent of the total dispersion; constant = .55.
[e] Function 2 had an Eigen value of .03, accounting for 100 percent of the total dispersion; constant = -.75.
[f] Value < ±.05

* p <.05
** p <.01
*** p <.001

the hypothetical questions about liability exposure when using ATMs than to admit they did not know the answer. Respondents in this group were much more likely to answer incorrectly than the respondents in the other two groups. The last variable which had a significant F ratio in the final step of the discriminant analysis was frequency of deposits at ATMs. In this case, the respondents who perceived decreased spending with ATMs made significantly more deposits, averaging almost one deposit weekly in comparison to the other two groups who made deposits at ATMs only about half that frequently.

Four hypothesized relationships were not significant in the final step of the discriminant analysis. These were the relationships expected between perceived increases in spending with ATM use and the following independent variables: financial management style, frequency of using ATMs to check account balances, and frequency of using ATMs at either grocery stores or at shopping malls. With the exception of frequency of using ATMs at grocery stores, these variables were significant at the first step of the analysis using one-way analysis of variance. Other variables that did not prevail in the final step of the discriminant analysis but were significant at the first step included education, marital status, children, student status and number of organizations.

The stepwise discriminant model constructed in this study accurately predicted 59.8 percent of the respondents who perceived that ATMs had no effect on their spending, 58.8 percent of those who perceived that ATMs resulted in decreased spending and 46.8 percent of those who perceived that ATMs resulted in increased spending (Table 2). For the analysis subsample, 54.6 percent of the overall classifications were accurate, which is a definite improvement over the 33.3 percent that could be expected by chance. The model was slightly less accurate when run on the test or validation subsample. In this case, 50.0 percent of the total classifications were correct. In this test of the model, there was slightly greater accuracy in classifying the respondents who perceived increased spending and those who perceived no effect than in classifying those who perceived decreased spending; the percentages of these groups correctly classified were 51.1, 49.6, and 46.2, respectively. When both the analysis and test phases are considered, the equation was most accurate in classifying respondents who perceived no effect on spending from ATM use and least accurate in classifying respondents who perceived increased spending from ATM use.

Summary and Conclusions

The majority of respondents in this study did not feel their usage of ATMs had affected their overall spending. However, a large minority (35 percent) did perceive that they spent more than they otherwise would as a result of using ATMs. Only four percent perceived that they spent less as a result of ATM use.

It is important that the perceptual nature of the dependent variable used in this study not be confused with actual increases and decreases in spending behavior. However, given the difficulty of collecting data on actual spending patterns, a study of the perceived impact of ATMs on spending is a practical and useful first step. Social psychological factors such as perceptions are important to an individual's subjective assessment of his/her well-being. Individuals, no doubt, vary in the extent to which they focus on external versus internal determinants of their own personal behavior. It is possible that certain individuals tend to overstate the role of external factors such as ATMs on spending while others tend to understate their importance.

Although the hypotheses had focused on the perceptions of increased spending as a result of ATM use, several of the independent variables were significantly related to the perception of decreased spending as well as to that of increased spending resulting from ATM use. Respondents who perceived that ATM usage had resulted

TABLE 2. Predicted Versus Observed Responses Regarding Impact of ATMs on Spending, Analysis and Test Subsamples

Observed Responses	Predicted Responses							
	Spend Less		Spend Same		Spend More		Total	
	Analysis Subsample	Test Subsample	Analysis Subsample	Test Subsample	Analysis Subsample	Test Subsample	Analysis Subsample	Test Subsample
Spend Less	10	6	3	4	4	3	17	13
Spend Same	45	70	131	127	43	59	219	256
Spend More	41	33	42	37	73	73	156	143
Total	96	109	176	168	120	135	392	412

in either increased or decreased spending were more likely (1) to report dissatisfaction with their financial management, (2) to make more frequent withdrawals from ATMs, (3) to be younger and (4) to have lower incomes than those who perceived that ATMs had not influenced their spending. Respondents who reported they spent less as the result of ATM usage were less knowledgeable than the other two groups about legislation pertaining to potential financial loss due to unauthorized use or errors when using ATMs. Those who perceived less spending also made significantly more deposits per week at ATMs than the other two groups.

The stepwise discriminant model used in this study accurately classified 54.6 percent of the analysis subsample and 50.0 percent of the validation or test subsample. Both of these results are considerably higher than the 33.3 percent that chance would predict. Thus, the study supports the general hypothesis that perceived impact of ATM usage on spending is a function of demographic variables, financial management practices and the character of ATM use. The model was most successful in classifying the respondents who perceived no effect from ATMs on their spending. It was least accurate in classifying the respondents who felt that ATMs increased their spending. Since understanding the latter group was the original focus of this study, further research efforts are needed to identify other variables which might prove more successful in predicting the influence of ATM usage on spending. Inclusion of social psychological variables such as attitudes toward money, financial management and one's self as well as personality traits might enhance the predictive power of the model. In addition, measures of present versus future time orientations, planning horizons, and values might also be considered. Variables which identify spending habits and financial practices, such as budgeting and record keeping methods, with greater specificity than those utilized in this analysis are also recommended.

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A Comparison of the Attitudes and Behaviors of Utah Men and Women in Their Roles as Primary Household Food Shoppers

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Abstract

A study was conducted to look at potential differences in male and female attitudes and behaviors towards food preparation and purchasing. Fourteen percent of the Utah respondents primarily responsible for food shopping were men.

Men were as likely as women to choose a warehouse style food store. They were also as likely to use the same store selection criteria, but they did differ in their attitudes towards food preparation and shopping behaviors. Generally men were less involved in the whole process. One conclusion is that men may pursue different instore shopping strategies, but they seem to use the same store selection decisions as women.

During the 1970's the "new" woman was a popular theme of investigation (Anderson 1982, Roberts and Wrotzel 1979). The 1980's may be the decade of the "new" man. The following are some examples of headlines in the trade press heralding this discovery: "Cooking, Cleaning and Shopping - The Manly Thing to Do" (Johnson 1983), "New Men" (Prescott 1983), and "The Male Customer" (Johnson 1981).

In her study for the Food Marketing Institute (FMI) Ziethaml found that in urban areas 40 percent of the food shoppers in supermarkets were men (Fritschner 1983). A survey of Better Homes and Gardens subscribers supported this shopping behavior with 42 percent of their male respondents saying they did more grocery shopping and kitchen duties than 5 years ago. Given the discovery that men are in supermarkets buying food it probably is not surprising that there has been some research into how male and female food shoppers might differ.

Role theory was used as the theoretical basis for Ziethaml's (1983) FMI study. Her primary hypothesis was that men were undertaking a non-traditional family role. Because of potential role conflict and lack of training and experiences she believed that, when compared to women, men would have different shopping behaviors. Her findings support this belief. In her study men spent less time on the shopping trip and spent fewer total dollars but spent more dollars per capita per household, were less likely to use coupons, and more likely to buy convenience foods.

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Study Objectives and Research Questions

The objective of this study was to look at male food shoppers' food shopping behavior. Previous research found that male shoppers did not spend time on making a series of individual shopping decisions, newspaper price comparisons or coupon clipping and it was thus concluded that men are less price conscious than women. However the situation may be that men are more inclined to weigh the substitutability and complementarity of resources and thus don't want to spend the time to make a series of repetitive decisions, but may spend some time to develop a decision rule such as "shop at a warehouse store every time since it has the lowest overall prices." The research question is "are women more likely than men to shop at a warehouse, price instead of convenience oriented, food store?"

Another possible strategy may be the purchase of generic products whenever they are available. The decision rule being, "buy generics whenever they are available since they are generally the cheapest 'brand'." Walker & Cude (1983) found that shoppers could save almost as much money buying generics as they could by extensive and intensive use of unit price information (micro-behavior). Thus, instead of trying to find the absolute lowest price on every purchase by shopping for specials and using unit prices, men may simply buy generics since overall they will spend only slightly more money with this approach. The resulting question is: are men more likely to buy generic products?

The final objective of this study was to investigate food preparation as well as food shopping attitudes and behavior. One possible explanation for Ziethaml's (1983) finding that men pursue lower time consumption food shopping behavior may be that they were not as interested in cooking and therefore not as concerned about the food that goes into meal preparation. Finally, a demographic comparison of the two sexes of shoppers was also conducted.

Methodology

Data were collected during April 1983 in the Provo, Utah Standard Metropolitan Statistical Area (SMSA). A proportionate stratified sample was selected with the strata being the city and suburbs of the SMSA and the proportions being based on the areas' population.

The questionnaire was administered via telephone interviews. Half of the telephone numbers were obtained from a telephone direc-

tory. The other half were obtained via a variation of the plus one technique. The last digit of the randomly selected directory number was dropped and a random number was substituted. This technique was used to reach unlisted and newly issued telephone numbers.

Partially as a result of the random number replacement technique the response rate was 58 percent. The reason for this rate was due to non-working and business numbers (14 percent), non-contacts (14 percent) even with 3 callbacks in the evenings and on the weekends, and refusals (14 percent). There were 300 respondents.

The person who responded to the questions was the individual in the household who was primarily responsible for food shopping. Previous researchers did not interview the person primarily responsible for food shopping. Although it is interesting to know how all men and women shoppers differ, primary shopper characteristics are of greater interest since these consumers probably spend more time and dollars on food procurement.

When compared to the 1980 SMSA census for Provo, Utah, there were no significant differences between the respondents and the general population on the basis of education, household size, and income (both at the .1 level). However, respondents to this survey were somewhat older (.1 level). The difference was primarily between the 18-24 and 25-34 year old group. Based on the census 39 percent of the population was 18-24, however, in this study only 19 percent of the respondents were in this age group. But 25-34 year olds were overrepresented (33 percent respondents versus 24 percent census).

The Questionnaire

The intent of this study was to investigate both food shopping attitudes and behaviors. We believed that food shopping orientation would be partially influenced by food preparation attitudes and behavior. Namely the more interested a person was in cooking the more likely he/she would also have a more favorable attitude towards food shopping. Thus a scale containing both attitude and behavior statements along with statements related to cooking and food purchasing was necessary. Roberts and Wortzel (1979) did develop such an instrument.

A number of modifications were made to the Roberts and Wortzel scale. First their scale was shortened. Generally this consisted of only taking those items from the original scale which loaded at .45 or above on the factors developed by Roberts and Wortzel. Also the statements that dealt most directly with food preparation or shopping were selected. Then instead of using the original neutral response scale (5 point) a forced choice response scale (6 point) was used.

During the first pre-test it was found that respondents had a difficult time responding to the behavior statements using strongly agree to disagree choices. This was determined when respondents expressed concern that the choices given did not seem appropriate to them. The scale responses were modified so that the behavior statements had responses of always, most of the time, some of the time, occasionally, rarely, and never. The statements were again pre-tested and this change greatly enhanced their usability. Questions were judged to be usable when respondents readily answered appropriately using the forced choices available. The reliability of the 17 attitude statements using Cronbach's alpha was .58 and for the 13 behavior statements the alpha was .67.

Results and Discussion

Fourteen percent of the respondents who were primarily responsible for food shopping for the household were men. This is lower than Ziethaml's FMI (1983), store intercept figure of 40 percent. However, the selection criterion in her research was sex and not the frequency of food shopping. Thus not all respondents in the FMI study were the main food shopper for their households.

Store Type Selection

Respondents were first asked, "Where do you purchase most of your canned and dry groceries?" There was not a significant difference (.4 level) in the male and female shopper responses (Table 1). Around 50 percent of both sexes shopped at a warehouse type store. Women were a little more likely to choose a store on the basis of price, 48 versus 38 percent. However, the difference was not significant (.4 level).

TABLE 1. Store Selection Analysis of Male and Female Respondents

	Male (n=42)	Female (n=258)
A. Place where most groceries were purchased:		
Warehouse type store	48%	56%
Supermarket	52	44
	100%	100%
x^2 = .72	Significance = .40	
λ = .01		
B. Primary reason for choosing a store:		
Convenience	36%	33%
Low prices	38	48
Other reasons	26	19
	100%	100%
x^2 = 1.9	Significance = .40	
λ = .00		

These findings mean that although men have a slightly greater tendency to have reasons other than low prices for choosing a store there is a sizable minority who will choose a store on

the basis of price. They were also as likely as women to go out of their way to a price oriented store. In Provo most consumers lived within a 5 minute drive of a supermarket and 10 to 15 minutes from a warehouse type store. Thus, as will be presented in a following section, even though men may not use as many micro- cost saving strategies as women, they appear to be equally likely to pursue one macro-strategy and that is shopping the perceived lowest price store.

Demographic and Shopping Trip Comparisons

Male shoppers were significantly different (.05 level or greater) from women grocery shoppers on a number of demographic variables. Slightly more than a third of the men were not married versus slightly less than 20 percent of the women shoppers (Table 2). Given this finding it could be expected that male shoppers might come from smaller households.

TABLE 2. Comparison of Male to Female Shoppers on Demographic Variables and Shopping Trip Characteristics

	Male (n=42)	Female (n=258)
A. Marital status		
Married	64%	81%
Not married	36	19
	100%	100%
x^2 = 5.4 Significance = .02		
λ = .00		
B. Family size		
1 person	19%	7%
2 people	31	28
3 "	19	14
4 "	7	18
5 or more people	24	33
	100%	100%
x^2 = 9.5 Significance = .09		
λ = .01		
C. Size of weekly grocery bill		
$25 or less	39%	27%
26-50	51	37
51 and over	10	36
	100%	100%
x^2 = 11.34 Significance = .004		
λ = .06		
D. Frequency of grocery shopping		
Less than once a week	19%	23%
Once a week	36	48
More than once a week	45	29
	100%	100%
x^2 = 4.7 Significance = .10		
λ = .02		

TABLE 2. (cont.)

	Male (n=42)	Female (n=258)
E. Education of Respondent		
High school or less	24%	41%
Some college	50	43
College graduate	26	16
	100%	100%
x^2 = 5.1 Significance = .078		
λ = .00		
F. Occupation[1]		
White collar	22%	42%
Blue collar	39	26
Retired	12	16
Other	27	16
	100%	100%
x^2 = 7.8 Significance = .05		
λ = .03		
G. Age of respondent		
18-24	36%	17%
25-34	29	32
35-44	9	17
45-54	7	14
55-64	5	10
65 & over	14	10
	100%	100%
x^2 = 10.9 Significance = .05		
λ = .01		
H. Household income		
$10,000 or less	48%	26%
$10,001 - 20,000	27	36
$20,001 - 30,000	18	20
$30,000 & over	7	18
	100%	100%
x^2 = 8.5 Significance = .04		
λ = .04		

This was the case with nearly 50 percent of the men versus about one-third of the women residing in one- or two-person households. Probably because they shopped for much smaller households, men had lower grocery store bills. Ninety percent of them had weekly grocery store bills of 50 dollars or less whereas only two-thirds of the women spent this amount. Men tended to shop more frequently. Nearly 50 percent of them were in a food store two or more times per week while less than a third of the women shopped this frequently. As presented in the next section, men did less planning for their shopping trip. This may also be one reason why they shopped more frequently.

Men food shoppers had significantly higher levels of education. Twenty-six percent of them

[1]Thirty nine percent of the female respondents said they were homemakers while none of the male shoppers stated this occupation. This occupational grouping was deleted from the significance test.

were college graduates as contrasted to 16 percent for women. However, women were more likely to hold white collar jobs versus the male modal occupational grouping of blue collar. This finding can be partially explained by women tending to clerical and service jobs, which were classed as white collar positions in this study. The high percentage of respondents, especially males in the "other" occupational groups, is due to the number of respondents who were college students.

Probably because the male shoppers were more likely to be college students, they were also more likely than women shoppers to be younger and poorer. A little over one-third of the men were 18 to 24 years old whereas less than 20 percent of the women were in this age group. When looking at income nearly 50 percent of the men who shopped for food came from households with incomes of $10,000 a year or less. About one out of four women came from households with this level of income.

The resulting profile of the male shopper is: he was more likely to be single, shop for a smaller household, spend less money in a food store but go there more frequently, have a higher level of education or be working towards a college degree and as a result tend to be younger and poorer than the woman food shopper.

Food Shopping and Preparation Attitudes and Behaviors

The findings presented in Table 3 are similar to the results of the Ziethaml (1983) study. Men were less fussy about the food they purchased and worried less about nutrition. Basically they appear to be less involved in their food shopping activities.

Nationwide men may be doing more cooking than they used to but based on this study when compared to women they like it less. Men were less interested in winning praise for their cooking and were more likely to see better outlets for their energies than cooking.

The last attitude statement in Table 3 is especially interesting. When responding to the statement, "I think men do as good a job of food shopping as women" women thought men could not do as good a job as they could. Perhaps this is due to reverse chauvinism. More likely it is due to the different behaviors the two groups used when they went shopping. Men used different shopping strategies than women. They were less likely to read periodicals and labels, or shop with a list, and more likely to buy convenience foods. However it also appears men, compared to their potential spouses, are more likely to think they will have some role in food procurement. Overall, 35 percent of the men thought they would have a role in household food shopping while only 8 percent of the female respondents thought this. Thus, it appears the single females in this study hold more traditional views of their roles than the men.

These findings should be applied with caution however. This study was conducted in a market with very traditional values. It is likely that, if this question were asked in other SMSA's, a higher percentage of men may plan on continuing shopping and very likely more women might expect their spouses to participate in this activity.

TABLE 3. Comparison of Male to Female Responses to Food Preparation and Shopping Attitude and Behavior Statements

Attitude[1]	Males (n=42)	Females (n=258)	T-test	Significance
I'm very fussy about the food I buy	2.67[1]	1.73	4.91	0.000
I worry about nutrition	2.05	1.04	4.03	0.000
Winning praise for my cooking is important to me	3.48	2.28	4.56	0.000
I have better ways to spend time than in cooking	4.71	3.63	3.56	0.000
I think men can do as good a job of food shopping as women	2.12	2.97	-2.66	0.008
Behavior[2]				
I buy the highest quality food available	2.86	2.45	2.29	0.023
I use label information to decide which brand to buy	3.36	2.81	2.03	0.044
I read magazine and newspaper articles for new food ideas and receipes	4.10	2.78	5.01	0.000
I compare labels to select the most nutritious food	3.86	2.93	3.68	0.000
I use a list when shopping for food	2.60	1.80	3.52	0.000
I buy ready prepared foods and meals	4.57	5.12	-3.23	0.001

One intent of the study was to look at the possible generic brand preference of men. There were no significant differences in men and women's attitudes towards, or purchasing frequency of, generic products. However, part of

[1] Strongly agree = 1; strongly disagree = 6.

[2] Always = 1, most of the time = 2, some of the time = 3, occasionally = 4, rarely = 5, never = 6.

the reason may be an artifact of the market. In the Provo-Orem SMSA, two of the three warehouse food stores did not carry a line of generics. The third warehouse type store had a very limited selection integrated with the national and private label brands. On the other hand the supermarkets in this market did carry a fairly complete line of generics. However nearly 50 percent of both sexes of respondents shopped in the warehouse style food markets. Thus, it may be that the low-price store was perceived as a more important shopping decision rule than generic availability to respondents in this study.

Finally, as another indicator of willingness to go grocery shopping, single men and women food shoppers were asked if they would continue with this activity if they were to marry. As can be seen from Table 4 a majority of the single men view grocery shopping as a short term activity and one they will do until they find a purchasing manager for their households.

TABLE 4. Perceived Food Shopping Role After Marriage

	Male (n=14)	Female (n=49)
Continue to shop	14%	92%
Would not continue	64	2
Maybe	0	4
Shop with spouse	21	2
	100%	100%

Cell sizes are too small for chi-square analysis

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SELF-EMPLOYED WOMEN'S USE OF TIME

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Abstract

The time use of families was analyzed by employment status of the wife. Employment status of wives included full-time homemakers, self-employed, and employed by others. Individual t tests indicated that family time use often varied with employment status. However, multivariate analysis of variance showed that only time use of the older child in household production and the homemaker's time in physical care, unpaid and paid work differed significantly with wife's employment status.

Self-employed women are those who own businesses operating either inside or outside their own homes.[4] Women-owned businesses compose the fastest growing segment of small businesses in the United States (38). Various studies have indicated that both female and male entrepreneurs have started their businesses for similar reasons, to be independent, to achieve, to use skills and talents they had developed, or to increase job satisfaction (29). Female entrepreneurs have additional concerns. Some are motivated by economic necessity and the desire to stay at home with children (29, 35, 46). Some feel that discrimination has slowed promotions and/or pay raises (43, 46).

Some firms have changed their policies on job sharing and in-house child care to accommodate the needs of working women with children. But as women retain primary responsibility for home production some women perceive self-employment as an opportunity to combine work for pay with work in the home (46). Since much family work is done simultaneously, especially some child care tasks, this may seem like a plausible way to combine the two responsibilities and more flexible scheduling than working for some else. The efficacy of this potential management strategy is largely undocumented.

Past research about self-employed women has focused on personality characteristics, motivation, and descriptive business information. For the most part, popular literature has been concerned with how to get started in business. Little or no research exists as to how these women differ from nonemployed women and women who work for others. The present study makes an initial attempt to fill this void.

The purposes of this paper are to 1) describe the time use and socioeconomic characteristics of self-employed women and their families and to describe the services they buy to substitute for their labor in home production, and 2) to determine whether self-employed women and their families use their time differently than other women and their families.

Time Use of Families with Wives Working for Pay

Nearly all of the research on time use has shown that women who work for pay spend less time doing housework than full-time homemakers (44, 40, 25, 20, 27, 17, 23, 1). The most important variable accounting for hours spent in housework was hours in the labor force (39, 42, 20, 27, 14).

Time spent in the labor force not only reduced time in housework in general but was also found to reduce time spent in each activity (44, 25, 42, 27, 23). By using a different set of assumptions, however, Stafford (32) partially contradicted these findings indicating that employed women spent more time in family care but less time in most other housework.

The sparse literature on time use of self-employed women, allows conclusions to be drawn but hints that time of self-employed women may be similar to that described in the literature above, for all employed women. Nickols and Fox (19) found that women working at home for pay spent more time in housework than those working outside the home. However, they spent no more time in family care than did women working in the labor market.

In Reed and Fanslow's (24) analysis, female entrepreneurs spent about one half the time employed women spent in household work reported elsewhere (42, 8). The discrepancy between the findings of Nickols and Fox (19) and Reed and Fanslow (24) may have been an artifact of the method of data collection. Reed and Fanslow used recall, whereas, time diaries were used by Nickols and Fox. Likewise, the difference in hours spent in housework between employed and self-employed women reported by Reed and Fanslow (24), Walker and Woods (42), and Cogle, Beakley and McFatter (8) may also be attributable to method of data collection.

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[4]Self-employed women exclude "homemakers" who are defined as people working for a firm owned by others, who do the work in a place that is neither controlled by nor managed by the firm paying for the work (9). While homeworking is for the most part illegal in the United States numbers of people engaged in homework are growing (4).

In their study of female entrepreneurs, Pellegrino and Reece (22) reported that female entrepreneurs felt they had underestimated the amount of time required for business and had problems with time management.

We have found only one article describing time use of self-employed women's husbands and children. Husbands of self-employed women spent 7.7 hours per week in household work, less than one half the time spent by their wives (24). Studies using time diaries have also indicated that husbands' time has not significantly replaced wives' time in housework (42, 26, 20, 27).

Pleck (23) found that the amount of time contributed by husbands to family work was related to sex-role attitudes. As numbers of hours in paid work increased both husbands and wives with liberal sex-role attitudes reduced the amount of time spent in family work by less than those who had more conservative sex-role attitudes (23). Abdel-Ghany and Nickols (2) also concluded that since other variables did not adequately explain husbands' time use such factors as sex role stereotyping may have accounted for husbands' time use.

In the Shifflett and Hoskins (30) study of home industries[5], some women engaged in work at home because their husbands wanted them at home. One husband built an extension onto the house for the wife's business so that she would remain at home. Furthermore, while many women running businesses from home had familial support and help in their endeavors others had families who were embarassed about the woman's activities. One woman conducted business only while her son was at work because he was ashamed. On the other hand, USDC (37) study of female entrepreneurs found that families were very supportive.

Neither do children make sizeable contributions to household work (19, 27, 24). Wives' time in household work increased with younger children (27, 20, 23). Thus while many women have joined the labor force the demands on their time for home production have not abated.

While quantity of time in market and home work affect feelings of well-being so does the schedule of work. Staines and Pleck (33) found that working a nonstandard pattern or a large number of hours reduced the quality of the worker's family life by increasing family conflict. Shift pattern was related to educational and socioeconomic status (SES) of the couple. Husbands and wives with high education tended to both have day shifts while couples with lower status and less education were likely to work different shifts and variable shifts (p. 103). Previous work showed that time in work affected time in family roles more for men than women but Staines and Pleck (33) showed the opposite (p. 115). Women perceived more conflicts between work and family life than did men (p. 63).

Socioeconomic Characteristics

Female entrepreneurs tended to be much better educated than average and most were married (10, 37). The average number of children of female entrepreneurs in the USDC, 1978 survey was two (p. 35). That study also revealed that female entrepreneurs tended to have had extensive work histories. Forty-three percent had worked for at least 21 years and only about one-fifth had worked for 10 years or less prior to starting their own businesses (p. 34). The average age of the female entrepreneurs who participated in the USDC, 1978, and DeCarlo and Lyons, 1979 studies was between 35 and 50. Most had started their businesses in recent years.

Characteristics of female entrepreneurs include tenacity regarding work-related tasks, exceptional willingness and ability to work hard, great devotion to the business, being well-informed about her business and the ability to use negative situations to advantage (37, 46). However it's also suggested that women business owners need to think bigger and take more risks (46). Women in home industries tended to charge prices that were very low and were fearful of financial loss (30).

Socioeconomic characteristics have also been shown to be related to time use. The findings summarized below pertain to dual earner families.

The impact of occupational status on time use is often obfuscated because of its correlation with wage rates and family income. In the study by Nickols and Metzen (20) occupational status had a statistically significant, negative effect on wife's time spent in household work but added virtually nothing to the variance explained by other variables. Hafstrom and Schram (14) found that wife's occupation did not affect her time spent in household work. Nickols and Fox (19) analyzed management strategies used by wives working in the labor force noting that women in high status occupations hired more child care services than those in lower status occupations or full-time homemakers but used the same amount of housecleaning and laundry services as other wives. Wives in high status occupations also spent less time in housework than other wives but spent the same amount of time in care of family members.

Analogously Pleck (23) and Robinson (26) found that as education of employed husbands and wives increased time spent in housework decreased but time spent in child care increased. Education did not predict time spent in housework by wives in the Hafstrom and Schram (14) study and had only a modest, negative influence in the Nickols and Metzen (20) work. Education did not influence equity of allocation of household labor (5).

The influence of location on time use has rarely been addressed but may be especially important in

[5]Shifflett and Hoskins (30) loosely define home or household industries as "characterized by their small scale, simple technology, and the intimate relationship of producers with resources, products, and consumers...the industry is run by only one woman, sometimes with the assistance of a child, close relative, or neighbors." (p. 1).

choices women have about where to work for pay, at home or in the market. Until technology makes it possible to switch the workplace to the home women in rural areas often lack opportunities for paid work outside the home. Time management demands and strategies may vary by residential location. McCullough (17) and Robinson (26) found that total household work time was highest for women living in rural areas, however Nickols and Fox (19) found no differences in time spent in housework between these women.

Substitutes for Labor in Household Production

To compensate for the loss of the wife's time in household production economic theory suggests use of substitutes. Buying strategies to save time have been shown to vary by the families' locations. Those in urban areas tended to purchase more meals away from home (17, 19) and to use more dry cleaning and laundry services (19). This may have resulted from their greater availability in urban areas.

Paid help, a potential substitute for the homemaker's time, offers a means to maintain standards for output and to ease time pressures. However, some researchers have shown that employed-wife families were no more likely than nonemployed-wife families to hire help (25). Walker and Woods (42) found that paid help for laundry, housecleaning and home maintenance was rarely used. A slightly higher proportion of employed-wife families used paid help for housecleaning but a higher proportion of nonemployed-wife families used help to wash and iron clothes. Neither group was likely to use diaper service.

The one area of paid help used more often by working wife families was child care, however, families with wives working at home used less hired child care (42, 19). Many of the women in home industries cared for their children during production hours or produced after their children had gone to school or to bed (30).

Objectives

Based upon the findings of related research and on logic, the following objectives were derived:

1. Describe time use patterns, substitutes for time, and socioeconomic characteristics of women who are self-employed for pay, employed outside the home for pay, and employed as full-time homemakers;

2. Determine whether the use of time of self-employed women and their families differs by the woman's employment status.

Procedure

Data Source and Sample

Data from the eleven-state family time use study, "An Inter-state Urban/Rural Comparison of Families' Time Use," were used in this study. NE-113 examined time spent in household production in two-parent, two-child families from California, Connecticut, Louisiana, New York, North Carolina, Oklahoma, Texas, Utah, Virginia, and Wisconsin. For this analysis families were grouped according to the employment status of the wife -- whether she was nonemployed, employed by others, or self-employed. Of the 2100 women participating in the time use study, 57.6 percent were nonemployed, 36.7 percent worked for others, and 5.65 percent were self-employed. Because of missing values, only 1700 families were used in the statistical analysis.

Analysis

To meet the first objective we computed means to describe time use of family members, types of time substitutes used by and socioeconomic characteristics of the families composing the sample. The means of each variable are reported in Table 1 for the three categories of wife's employment.

The second objective was met using a series of procedures. Initially, the student's t test was used to determine differences in means between nonemployed and self-employed women, and women employed by others and self-employed women, in allocation of time, socioeconomic characteristics and use of outside services.

Time use patterns differing significantly ($p < .05$) by employment status were selected for further analysis by a second procedure, multivariate analysis of variance.[6] The multivariate analysis of variance (ANOVA) determined whether allocation of time varied significantly by the selected socioeconomic and outside help variables.

Although the analysis identified variables which accounted for variance, it did not identify which means among the categories of a significant variable were significantly different. Thus, if independent variables were significant at the 0.05 level in ANOVA, the third procedure, a least squares means test, was used to ascertain significant differences among the category means. Least squares means were adjusted for other variables in the analysis. Use of adjusted means in the follow-up test is consistent with the multivariate ANOVA and absence of interaction effects (7). Due to the unbalanced design of these analyses, the GLM (general linear models) procedure in the Statistical Analysis System was utilized (28).

Variables

As a result of the first t test procedure, dependent variables used in the ANOVA included the homemaker's time in total household work (HHP), spouse's time in total household work (SHP), and

[6] Given the richness of the time date of the NE 113 sample the initial t tests were used to reduce the number of ANOVAs. If there were no variation by employment status indicated with the student's t test there would have been no difference by employment status found using any multivariate technique.

the older child's time in total household work (OHP). The sum of minutes spent performing the following tasks gave a measure of total time per day spent in household work: (1) food preparation; (2) dishwashing; (3) shopping; (4) housecleaning; (5) maintenance of home, yard, car, and pets; (6) care of clothing and household linens; (7) clothing construction; (8) physical care of household members; (9) non-physical care of household members; and (10) management (Lovingood, 1981). Results of the t test indicated that the three groups of women varied in time spent in each of the following specific categories of time use: dishwashing (HDW), shopping (HSP), physical care (HPC), nonphysical care (HNC), organizational participation (HOZ), paid work (HPW), and unpaid work (HUW). These specific time use categories were subsequently employed as dependent variables in the ANOVA.

Independent variables in the ANOVA included employment status of the homemaker (EMPSTAT), occupation of the homemaker (OCC), stage in the family life cycle (LIFE-CYCLE), homemaker's education (HED), residence (UR), and income (NCOM). As a result of the t test procedure a group of variables gauging outside help to the family was also included as independent variables. These were someone outside the family taking care of other household members (COHO), some outside the family providing house maintenance (OUTHM), and someone outside the family providing other paid services (OUTSER). Definitions and codes for these variables are reported in Table 2.

Results

Means and Results of t Test

Means reported in Table 1 describe how time was used. The results of the t test procedure used to compare time use of families of nonemployed, employed and self-employed wives are also reported in Table 1. Results will be reported first comparing families of nonemployed and self-employed women, second comparing families of employed and self-employed women.

TABLE 1. Results of T Test for Unemployed Women/Self-Employed and Women Employed by Others/Self-Employed Women[1]

		Unemployed n=1178	Employed by others n=811	Self-Employed n=116
Homemaker's time in household production[2]	HHP	476.28 (170.54)	331.91 (179.8)	359.19[A] (198.54)
Spouse's time in household production	SHP	139.15[A] (148.08)	127.38[B] (146.58)	89.43[AB] (133.64)
Younger child's time in household production	YHP	33.09 (84.86)	36.21 (73.57)	29.36 (79.31)
Older child's time in household production	OHP	35.10 (73.77)	40.78[B] (86.34)	27.46[B] (51.68)
Homemaker's time in food preparation	HFP	88.19 (56.96)	69.59 (51.58)	78.87 (58.11)
Homemaker's time in paid work	HPW	18.05[A] (49.27)	239.07[B] (331.51)	173.68[AB] (313.09)
Homemaker's time in unpaid work	HUW	27.36 (66.28)	21.66[B] (70.97)	38.96[B] (89.85)
Homemaker's travel time in paid work	HTPW	0.82[A] (6.78)	22.96 (31.92)	15.61[A] (48.58)
Homemaker's travel time in unpaid work	HTUW	6.18 (15.19)	7.18 (18.95)	5.49 (14.18)
Homemaker's time in organizational participation	HOZ	29.01[A] (75.28)	25.88 (69.66)	18.97[A] (52.25)
Homemaker's time in social and recreational activities	HRS	258.05[A] (151.38)	281.83 (153.14)	219.87[A] (156.66)
Homemaker's time in dishwashing	HDW	39.66[A] (28.77)	27.08[B] (26.01)	33.29[AB] (27.58)

TABLE 1 (continued).

		Unemployed n=1178	Employed by others n=811	Self-Employed n=116
Homemaker's time in shopping	HSP	52.27[A] (73.86)	47.39[B] (70.44)	31.97[AB] (49.29)
Homemaker's time in housecleaning	HHC	69.74[A] (71.62)	46.37 (59.37)	58.72[A] (56.78)
Homemaker's time in maintenance of home, yard, car and pet	HHM	33.21 (66.66)	18.36 (47.19)	23.87 (46.97)
Homemaker's time in care of clothing & household linens	HHC	23.32[A] (46.95)	23.18 (34.77)	23.29[A] (39.78)
Homemaker's time in construction of clothing & household linens	HHV	17.49[A] (48.78)	9.96 (37.39)	9.16[A] (33.38)
Homemaker's time in physical care	HPC	78.63[A] (80.37)	75.18[B] (93.13)	56.17[AB] (76.48)
Homemaker's time in non-physical care	HNC	57.35[A] (83.77)	42.88 (61.35)	38.12[A] (53.88)
Homemaker's time in management	HMG	18.38 (67.44)	15.84 (36.59)	19.47 (41.32)
Homemaker's education	HED	4.39 (1.78)	4.79[B] (1.96)	4.41[B] (1.63)
Homemaker's wage	HWAGE	12.84 (39.47)	3.78 (18.17)	4.10 (18.27)
Homemaker's salary	HSAL	0.41[A] (5.9)	69.66[B] (111.05)	59.35[AB] (80.90)
Age of older child	OAGE	7.79[A] (5.88)	9.84 (6.98)	9.79[A] (6.97)
Age of younger child	YAGE	4.41[A] (4.73)	3.33 (3.61)	3.34[A] (3.39)
Usual number of hours homemaker worked for pay a week	HWORKPY	0.37[A] (2.97)	33.84 (13.96)	24.70[A] (20.81)
Occupation	OCC	----	3.19 (0.93)	3.38 (0.76)
Urban/rural residence	UR	0.50	0.50 (0.50)	0.58 (0.50)
Take items to commercial laundry or dry cleaner	DRY	0.18 (0.46)	0.19 (0.47)	0.28 (1.02)
Someone ill in family	ILL	25.83 (33.85)	23.99 (37.98)	25.83 (32.27)
Someone from outside the household took care of children in the home	COH	1.72[A] (0.45)	1.72[B] (0.45)	1.82[AB] (0.39)
Someone from outside the household took care of children in someone else's home	COHC	1.64[A] (0.48)	1.62[B] (0.48)	1.76[AB] (0.44)
Care of children in a day care center	CDAC	1.95 (0.23)	1.91 (0.29)	1.93 (0.25)
Someone from outside the household took care of other household members	COHO	1.99 (0.13)	1.97 (0.16)	1.99 (0.09)
Someone from outside the household do housecleaning	OUTHC	1.96 (0.24)	1.92 (0.27)	1.92 (0.27)
Someone from outside the household do lawn or yard work	OUTYW	1.95 (0.22)	1.96 (0.19)	1.92 (0.27)
Someone from outside the household do painting or redecorating	OUTPR	1.98 (0.13)	1.97	1.99 (0.09)
Someone from outside the household service appliances	OUTSERAP	1.96 (0.20)	1.96 (0.24)	1.96 (0.18)
Someone from outside the household do house maintenance	OUTHM	1.97 (0.18)	1.96 (0.20)	1.95 (0.22)
Someone from outside the household do other paid services	OUTSER	1.95 (0.21)	1.95 (0.21)	1.96 (0.21)

[1]A's indicate significantly different means at the 0.05 level for unemployed women and self-employed women.

B's indicate significantly different means at the 0.05 level for women employed by others and self-employed women.

[2]Time is measured in minutes per day.

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The allocation of time of nonemployed women and self-employed women differed significantly on homemaker's and spouse's total time in household work, homemaker's time in dishwashing, shopping, housecleaning, care of clothing, clothing construction, physical and nonphysical care of family members, organizational participation, recreation, paid work and travel time to paid work.

Nonemployed (NE) homemakers spent more total time in household work than did self-employed (SE) women but interestingly, the husbands of SE women spent less time in household work than those of NE homemakers. In all other households work-related time use categories, including physical and nonphysical care, where significant differences were identified NE homemakers spent more minutes per day in the activity than did the SE. Nonemployed women also spent more time in organizational and social activities than SE women.

Outside services used to substitute for household help were used infrequently by families of both NE and SE women, although families of SE women used more child care services.

Demographically, NE and SE women were similar with respect to educational attainment and urban/rural location. However, the youngest child of SE women was younger than for the NE women and the age of the oldest child of SE women tended to exceed the age of an NE woman's oldest child.

Women who worked for others (E) and self-employed women differed significantly on spouse's and older child's total time in household work, dishwashing, shopping, physical care of family members, unpaid and paid work. Husbands and oldest children of SE women spent fewer minutes per day in household work than those of E women. While SE and E women spent the same total amount of time in housework, patterns varied slightly. SE women spent more time than E women washing dishes and in physical care of family members but less time shopping. SE women spent more time in unpaid but less time in paid work than E women.

Families of SE women were more likely to use babysitters than E women's families but otherwise did not vary on services hired. Socioeconomically E and SE women were similar, however, E women had more formal education and had higher salaries.

In summary, the univariate analysis indicated that husbands of SE women spent less time in household work than those in other families and the oldest child spent less time in SE's than E's families. The SE women spend less time in household work than NE women but the same amount as E women. In both cases time patterns differed but more so for NE and SE women than for E and SE women. Time spent by SE homemakers in other activities was also more similar to E's than NE's pattern but SE women spent less time than E women working for pay.

Families of SE women were similar in their scant use of hired services to the families of the other two groups. All three groups of women were similar socioeconomically. Dissimilarities were different for each pair of groups.

TABLE 2. Variable Definitions and Codes

Variable	Definition	Code
Employ	Employment status as reported by the wife. Nonemployed women working for others identified as hourly wage earners, salaried or other, and self-employed women, identified as self-employed.	1 = nonemployed women 2 = women employed by others 3 = self-employed women
OCC	Occupational level of homemaker	1 = high (professional workers - codes 40-85) 2 = medium (clerical and kindred workers and sales workers - codes 50-71) 3 = low (cleaning service, food service, private, household, laborers, operators and craftsmen - codes 10-43) 4 = housewife
Lifecycle	Stage in the family lifecycle	1 = children less than 6 years old 2 = one preschool age and one school age child 3 = children 6 years old or more
HED	Educational level of homemaker	1 = grade school (1-8) 2 = partial high school (9-11) 3 = high school diploma 4 = vocational or technical training 5 = partial college, no degree 6 = Associate's degree 7 = Bachelor's degree 8 = Master's degree 9 = Doctorate 10 = Professional degree
UR	Urban or rural residence	0 = rural 1 = urban
INCOM	Total income before taxes	1 = under $1,000 2 = $1,000-$1,999 3 = $2,000-$2,999 4 = $3,000-$3,999 5 = $6,000-$6,999 6 = $5,000-$5,999 7 = $6,000-$7,499 8 = $7,500-$9,999 9 = $10,000-$11,999 10 = $12,000-$14,999 11 = $15,000-$19,999 12 = $20,000-$24,999 13 = $25,000-$49,999 14 = $50,000 and over
CHHD	Someone from outside the household takes care of other household members	1 = yes 2 = no
OTHH	Someone from outside the household does household maintenance	1 = yes 2 = no
CHHIRE	Someone from outside the household does other paid services	1 = yes 2 = no

Results of ANOVA and Least Squares Procedures

As Table 3 shows the independent variables in the multivariate ANOVA explained between three and 45 percent of the variation in time use of family members. Although the univariate t tests indicated families of women in the three employment status groups differed in the time allocation to fourteen activities, results of the ANOVA holding socioeconomic and service measures constant (Table 3) indicate employment status significantly explained variance only for the total household work time of the older child, and the mother's daily time in physical care, paid work and unpaid work. The discussion of results will focus only on these four equations.

The follow-up test for significant differences among cell means, controlling for all other variables, indicated that the older child of the wife employed by others did more household work than the older child in families with a self-employed wife. Wives employed by others spent more time in physical care of family members than did self-employed wives. All three groups differed from each other in the daily time in paid work.

Self-employed wives spent the most time in paid work which may explain why their children did less housework and why they spent less time in physical care than the other groups. Nonemployed women did more unpaid work than the others.

The contrast between these results and those found with the t test reflect the effects of the additional variables controlled for in the ANOVA and least squares means procedures, i.e. any apparent differences in time use and employment status were actually results of other variables such as occupational skill level and life cycle stage.

Of these four uses of time, occupational skill level explained the variance in two of the homemaker's activities, paid work and unpaid work. The subsequent least squares means test indicated that the paid work time of low skill employees differed from that of medium and high skill employees but not from that of homemakers. Homemakers' unpaid work time was greater than all others.

Life cycle stage explained the variance in the same four activities explained by employment status. All life cycle stages differed significantly in the total daily household work time of the older child and physical care of family members by the wife. Wives with two school age children (stage 3) spent more time in paid work than wives in either of the other two stages. Wives with two school age children spent more time in unpaid work than wives with two preschool children (stage 1).

Urban residential location helped explain the variance in the older child's daily household work time but did not affect time in other activities. Rural children spent more time in household work than children from urban areas.

To briefly summarize results for the uses of time not explained by employment status focus is directed to the life cycle variable which explained variation in most of the other dependent variables. Wives with two school age children spent more time in housecleaning and organizational work than other wives. Those with two preschool children spent less time in social and recreational activities than other wives. Husbands with two preschool children spent more time in household production than other husbands.

Wife's education explained the variance in wife's total household work time and nonphysical care of family, time in housecleaning and social and recreational activities. Findings reflect no specific pattern. Wives with master's degrees spent significantly more time in nonphysical care of family than wives with less education. This

pattern is consistent with Pleck's (23) and Robinson's (26) findings. In a similar vein, wives with bachelor's degrees spent more time in nonphysical care than wives with technical training. Wives with doctorates spent less time in household work than wives with bachelor's or master's degrees, however, wives with bachelor's or master's degrees spent more time in household work than wives with some high school, high school diploma, or some college education. Wives with bachelor's degrees spent more time in household work than wives with high school diplomas. Wives with master's degrees also spent more time in household work than women with grade school educations. Wives with associate's degrees spent more time in housecleaning than any other wives. Wives with doctorates spent less time in housecleaning than any other wives except those with eight or fewer years of school and those with professional degrees. Wives with bachelor's degrees spent less time in social and recreational activities than wives with at least a high school diploma and wives with some college. Wives with eight years or less schooling spent more time in social and recreational activities than wives with technical training, partial college, and associate's and bachelor's degrees.

The set of variables measuring use of outside services affected the husband's daily time in household work and homemaker's time in housecleaning. Husbands did less household work when outside services were purchased. Homemakers did more household cleaning when someone from outside the household took care of other household members. Household income explained nothing.

Discussion

The results indicated that self-employed women in this sample spend more time in paid work than women employed by others, ceteris paribus. As one of the complaints most often voiced in literature was the time-consuming nature of self-employment it was not surprising that self-employed wives spent more time in paid work than employed wives.

Thus, if one of the primary reasons for choosing self-employment was that it enabled wives to increase the quantity of time spent with their family, it appears self-employment doesn't fulfill that goal. These results cannot, however, demonstrate the flexibility of time they gained. Depending on the nature of self-employment, it may have allowed these women to produce at times when family members were away, such as in the evening if a husband worked second shift. The self-employed women also may have done an effective job of simultaneously performing paid and home work, such as watching their own children while running a day care center. Results of work done by Edwards & Edwards (11), however, indicate that many people working in "electronic cottages" were not successful in combining child care and work and thus hired outside care, much to their disappointment.

Surprisingly, though self-employed wives spent more time in the labor force, they spent no less time in household production including nonphysical care of family members, than other wives. This may be attributable to the high levels of energy and needs to achieve and to control their environments cited as characteristic of entrepreneurs (10, 29, 34). The priority self-employed women placed on nonphysical versus physical care of family members may help allay concern some people have about quality of child rearing. More substitutes exist for physical care than for the intangible care that has such potential for affecting a child's health and productivity as an adult.

While time use varied by employment status, it was also explained by life cycle stage. This may indicate that quantity of family work and immediacy of demands caused by children may be more influential in explaining how wives use time than wives' own employment demands.

One of the interesting questions this research cannot address, but future research may, is how efficient self-employed women are. If they are working more hours for pay and the same amount for household work, same amount in recreational and social acitivites, ceteris paribus do they sleep less? Do they have the energy to sustain the pace until children grow and they have fewer time demands? Their needs for better management techniques may be high. Likewise, their uses of management strageties may be high; they may be excellent managers.

One aspect of efficiency, use of paid services to substitute for family members' labor in household work, was addressed in this study. Wive's time tended to be invariate with use of paid services. The inconsequential impact of paid substitutes for the homemaker's labor found in this study confirm earlier work by Walker and Woods (42). With the time constraints facing both self-employed and employed women and the availability of labor-saving services it is interesting that their use is low and invariate with employment status. This may reflect values for self-sufficiency or problems women have trying to be superwomen but may also be a function of income. The median income of self-employed women in 1975 was $3456, about one-half the income of full-time salaried females and one-third that of self-employed men (37, p. 31). Married women contributed between four and 25 percent of family income with the percentage tending to decline as husband's income increased (37, p. 35).

The apparent irrationality in not using services may however be quite rational if the assumption that they are labor-saving is not true or that the personal energy required to organize is high. Just as "time-saving" appliances don't necessarily reduce time in household work, so it may be for hired services. Furthermore, our results also indicate that the paid services are being used to substitute for the husband's rather than the wife's time in household work.

Spouse's time in household work was invariate with respect to wife's employment status, which would be expected from past research indicating that husbands do not substitute for wives' household labor. As outside services also did not influence wife's time in housework she might seek

other ways to accomodate a husband's inflexible schedule, family's traditional values, and need for additional income and her own professional devices through self-employment, either at home or in another location.

In summary these results imply that self-employed women worked more hours for pay and spent as much time in household production as other women. The time use of all family members was more often explained by the demands on time as measured by life cycle stage than by determination of inputs of labor including employment and occupational status of wives and use of paid substitutes.

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A DEMOGRAPHIC PROFILE OF INVESTORS IN NEVADA

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Abstract

Accelerated competition in investment industries has brought more information to bear on investors' decisions. This study profiles a sample of investors in order to analyze differences among investors of different assets. Respondents favored individually selected securities and money markets over professionally managed funds. Conclusions suggest needed investment advice and consumer information.

In less than six years the value of financial assets - stocks, bonds, savings accounts, etc. - held in the United States has more than doubled (8, B1). As a variety of authors have recently noted, investors are wealthier now than in the past - but also much more confused about how to invest, and reinvest, their money.[3]

Concerns about investment decisions are no longer limited to the more affluent in our society. The advent of high interest yielding savings accounts, money markets, and mutual funds with moderate investment minimums, have thrust so called "small savers" into the realm of complicated investment decisions.

Many people who previously did not have enough money to take advantage of a variety of investments are now able, and anxious, to do so. But in addition, a new, accelerated pace of competition and innovation in investment and banking industries has brought more and complex information to bear on the decisions of even experienced investors.

With interest in investment activity prevalent among a larger variety of individuals today than in the past, it should be useful to see a picture of which types of investors are purchasing the available variety of financial assets. Are there some particular characteristics which differentiate investors of different types of securities? This paper provides a description of investors in Nevada, and an analysis of the differences among investors of different assets.

Related Research

A search of the professional and popular literature on this topic resulted in few related research results to review. The home economics, business, social science and economics journals have not reported analyses of individual (in contrast to institutional) investor holdings and preferences. Reports of investor activity that are available either concentrate on institutional investors or combine individuals with institutions.

Except for the recent popular press reports of individual investors' current dilemmas, the literature concentrates on defining features of available investments, and on extolling the benefits of financial planning.

The only analysis of individual consumer reaction to available investment avenues uncovered was a study of Negotiable Order of Withdrawal Accounts (NOWs), individual retirement accounts (IRAs), and All Saver Certificates by Langrehr and Langrehr. Their research suggested that respondents believed they understood those products, but relied on financial institution personnel for their saving decision information. Their research found NOW account holders tended to be 65 years of age or over and have higher levels of education and income than non-holders. IRA owners were also found to be at higher socioeconomic levels and older than those not owning IRAs.

Methodology

In February, 1983, questionnaires were mailed to a stratified random sample of households in the state of Nevada as part of W-159 "Consequences of Energy Conservation Policies for Western Region Households." This current paper is concerned with one section of this survey which examined investment assets owned by the respondents.

Sampling for the W-159 study resulted in 579 rural and 416 urban respondents in Nevada which was a response rate of eighty-four percent. The analysis for this paper resulted in a sample of 902 respondents. The sample which formed the basis for this research can be profiled as follows.

Respondents' median age was forty-seven and one-half years. Median family income (before tax) for the respondents was approximately $25,000. Seventy-three percent of the sample respondents were married, living with or without children. Forty-two percent lived in urban areas while fifty-eight percent were rural residents.

Respondents were asked to identify the types of investments they had owned in the last ten years. These investments were categorized as follows: a business, a home, real estate other than a home, United States savings bonds, passbook savings accounts, time savings deposits, mutual funds, municipal bonds, Treasury notes or bills, gold or silver, stocks or bonds of corporations, money markets, or none.

Descriptive statistics were compiled to character-

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[3]For example, see Asinof (1983), Eisenberg (1983), Harris, (1983), Hilder (1983), Koshetz (1983), Nader (1984), Petruno (1983), Slater (1984).

ize the investors within the categories of investments. Chi square tests of significance and discriminant analyses were performed to test for differences between the groups of investors, and to determine discriminating demographic variables. The demographic variables hypothesized to distinguish between investors were: age, income, education, marital status, family type, and residence as urban or rural.

In this report analysis and discussion is focused on financial investments as opposed to investments in a business, home or other real estate. The latter three investments were excluded because financial investments such as time savings deposits, mutual funds, money markets, etc. are considered as more interchangeable with each other in an investment portfolio than are financial assets interchangeable with a home, real estate, or a business.

Therefore, the investment opportunities which form the focus of this paper are: U.S. savings bonds, passbook savings accounts, time restricted certificates of deposit, money market funds and accounts, municipal bonds, U.S. Treasury securities, individual selection of corporation stocks and bonds, gold and silver, and ownership of corporate stock and bond securities through mutual fund investments.

Results and Discussion

Table 1 illustrates the types of financial investments owned by the respondents. The historically widespread asset, passbook savings, proved to be most prevalent. Approximately seventy percent of the respondents reported owning this asset within the last ten years. This asset is followed by time savings deposits, owned by thirty-five percent of the sample.

TABLE 1. Investment Experience: Types of Investments Owned

INVESTMENT	PERCENT OF SAMPLE OWNING
	(N-902) %
Passbook Savings	68.7
Time Savings Deposits	35.1
U.S. Savings Bonds	27.8
Corporate Stocks/Bonds	27.8
Money Markets	25.3
Gold/Silver	13.7
Mutual Funds	11.9
Treasury Notes/Bills	6.1
Municipal Bonds	3.1

As many respondents owned U.S. savings bonds as owned individual corporate stocks and/or bonds (28%), while money market securities were owned by one-quarter of the respondents. Approximately fourteen percent of the sample owned gold or silver: twelve percent owned corporate securities through mutual funds: six percent held U.S. Treasury securities: and three percent owned muncipal bonds.

Discriminant analyses were performed to test whether the investors could be distinguished on the basis of a set of demographic variables. All tests resulted in statistically significant differences between groups. Thus, investors in this sample can be differentiated from noninvestors on the basis of the set of variables including marital status, age, family type, education, income and residence. However, low eigenvalues and canonical correlations, and high Wilks Lambdas (See Appendices) point to the relatively low importance of the discriminating power present. Age, income and education consistently proved to be the most important discriminating variables.

Chi Square analyses provided further results from which to draw conclusions. In the Chi Square analysis, age, income, marital status and education proved to be the significant variables distinguishing investors from non-investors.

TABLE 2. Demographic Comparison of Investors and Noninvestors

DEMOGRAPHIC VARIABLE	INVESTORS	NONINVESTORS
	%	%
AGE		
Under 30	11.8	28.8
30 - 39	21.5	18.6
40 - 49	21.0	10.2
50 - 59	19.0	13.6
60 - 69	17.3	23.7
70+	9.3	5.1
	99.9[a]	100.0
	X^2 = 18.8*	
INCOME		
Under $10,000	9.8	38.0
$10,000-$14,999	10.3	22.2
$15,000-$19,999	9.1	4.8
$20,000-$24,999	16.9	17.5
$25,000-$29,999	11.6	9.5
$30,000-$49,999	19.4	4.8
$50,000 +	10.8	1.6
	12.2	1.6
	100.1	100.0
	X^2 = 88.7*	
MARITAL STATUS		
Married	74.7	46.9
Divorced	8.6	21.9
Widowed	8.3	14.1
Separated	1.1	4.7
Never Married	7.3	12.5
	100.0	100.1
	X^2 = 27.3*	
EDUCATION		
0 - 8 Grades	3.5	9.4
Some High School	9.7	20.3
High School Graduate	24.2	21.9
Trade School	5.1	1.6
Some College	32.2	32.8
4 Year College Degree	11.7	6.3
Some Graduate Work	6.2	1.6
Graduate Degree	7.5	6.2
	100.1	100.1
	X^2 = 17.2*	

TABLE 2. (continued)

DEMOGRAPHIC VARIABLE	INVESTORS	NONINVESTORS
RESIDENCE		
Rural	57.5	56.3
Urban	42.5	43.7
	100.0	100.0
	X^2 = .00	

[a]Percentages may not add to 100% due to rounding

*p ≤ .01

In general, the sample's investors were older, more likely to be married, more educated and have higher incomes than did noninvestors. Seventy-five percent of the sample's investors were married; while only eighteen percent of the investors were divorced, separated or widowed, and only seven percent of the respondents having some investments were never married. In contrast, only forty-seven percent of the noninvestors were married, while forty-one percent were divorced, widowed or separated, and twelve percent were never married.

The median age of investors was forty-seven and one-half years while the median age of the sample's noninvestors was forty years of age. Over fifty-seven percent of the investors had at least some college education. Only thirteen percent had not completed high school. In contrast, thirty percent of the respondents having no investments had not finished high school. The investors' median 1982 before-tax family income fell in the $25,000 to $29,999 range, whereas the annual median family income of noninvestors proved to be in the $10,000 to $14,999 category.

Age, income and education also proved to be significant variables distinguishing between investors of different types of assets. In addition to those variables, residence as urban or rural helped to differentiate investors of several assets. The respondents' marital status and family type did not add to our ability to distinguish between investor characteristics. This fact is probably attributable to the lack of variety of family types among investors in our sample. The overwhelming majority of the investors were married.

Not surprisingly, ownership of U.S. savings bonds, passbook savings and time deposits in Nevada is dispersed rather evenly among the investors between the ages of thirty and fifty-nine years of age (see Table 3). This generally even distribution of passbook accounts, certificates of deposit and U.S. savings bonds is also evident among respondents of different income groups. Approximately one-quarter of the owners of these three assests reported before tax family incomes of less than $20,000 in 1982. The educational attainment of owners of these assests was lower than that of other investors.

TABLE 3. Characteristics of Investors in Savings Bonds, Passbooks and Time Deposits

VARIABLE	SAVINGS BONDS	PASSBOOK SAVINGS	TIME DEPOSITS
	%	%	%
AGE			
Under 30	12.4	11.1	7.0
30 - 39	25.7	22.3	17.3
40 - 49	21.2	20.1	21.3
50 - 59	19.1	19.3	21.9
60 - 69	14.5	17.7	20.3
70 +	7.1	9.5	12.3
	100.0	100.0	100.1[a]
	X^2=6.6	X^2=6.8	X^2=26.75*
EDUCATION			
Less than High School	6.0	11.4	9.9
High School Graduate	25.7	23.2	17.8
Trade School	4.8	5.0	4.5
Some College	33.3	33.9	36.3
4 Year Degree	14.1	12.8	14.3
Graduate School	16.0	13.6	17.2
	99.9	99.9	100.0
	X^2=22.9*	X^2=20.4*	X^2=27.2*
FAMILY INCOME			
Less than $10,000	5.7	9.9	5.5
$10,000-19,999	13.8	18.1	16.5
$20,000-29,999	29.3	27.7	28.6
$30,000-49,999	35.7	30.4	30.5
$50,000 +	15.4	13.8	18.8
	99.9	99.9	99.9
	X^2=34.6*	X^2=31.6*	X^2=56.5*
RESIDENCE			
Urban	41.0	43.2	42.3
Rural	59.0	56.8	57.7
	100.0	100.0	100.0
	X^2=.25	X^2=.27	X^2=.01

[a]Percentages may not add to 100% due to rounding

*p ≤ .01

Mutual funds, municipal bonds, corporate securities and money markets were concentrated among urban investors' portfolios (see Tables 4 & 5). Mutual funds, corporate stocks and bonds, and money markets were significantly more popular investments for the urban respondents than for the rural dwellers. Sixty-one percent of municipal bond investors were urban residents.

Ownership of corporate stock and bonds, and money markets was surprisingly widely distributed among investors thirty to sixty-nine years of age (see Tables 4 & 5). Investors evidently see these avenues as important assets for wealth accumulation and maintenance. In contrast, mutual funds and municipal bonds were found to be highly concentrated among investors in the forty to sixty-nine year age groups. Approximately fifty-five percent of all mutual fund and municipal bond holders were between the ages of forty and fifty-nine years. One would expect to find municipal bonds concentrated among older, higher income in-

vestors since the bonds' tax exempt status becomes more advantageous to people in higher income tax brackets. Considering the conceptual basis for mutual funds, this is not an expected finding.

TABLE 4. Characteristics of Investors in Mutual Funds, Municipal Bonds and Corporate Stocks/Bonds

VARIABLE	MUTUAL FUNDS	MUNICIPAL BONDS	CORPORATE STOCK/BOND
	%	%	%
AGE			
Under 30	3.9	10.7	8.6
30 - 39	13.6	3.6	23.0
40 - 49	26.2	32.1	22.2
50 - 59	27.2	25.0	19.3
60 - 69	16.5	21.4	19.8
70 +	12.6	7.1	7.0
	100.0	99.9[a]	99.9
	X^2=19.2*	X^2=7.4	X^2=8.5
EDUCATION			
Less Than High School	7.5	0.0	6.8
High School Graduate	10.4	10.7	14.4
Trade School	2.8	0.0	3.6
Some College	33.0	39.3	34.8
4 Year Degree	20.8	21.4	17.6
Graduate School	25.5	28.6	22.8
	100.0	100.0	100.0
	X^2=37.8*	X^2=18.3	X^2=68.2*
INCOME			
Under $10,000	7.7	3.6	5.3
$10,000-19,999	7.7	10.7	11.4
$20,000-29,999	22.1	21.4	23.5
$30,000-49,999	35.6	25.0	35.4
$50,000 +	26.9	39.3	24.4
	100.0	100.0	100.0
	X^2=42.1*	X^2=24.4*	X^2=90.1*
RESIDENCE			
Urban	54.2	60.7	51.4
Rural	45.8	39.3	48.6
	100.0	100.0	100.0
	X^2=6.2*	X^2=3.2	X^2=10.6*

[a]Percentages may not add to 100% due to rounding
*p ≤ .01

Mutual funds, municipal bonds and corporate securities were predominately held by investors with incomes of at least $30,000 (Table 4). Over sixty percent of the owners of these assets had before tax incomes of $30,000 or more. Money markets, however, were found in the portfolios of less affluent investors. The dispersion of money markets by income more closely approaches a generally even distribution. One-half of the money market owners reported incomes of less than $30,000 (20% had less than $20,000 in income).

The educational attainment of mutual fund and municipal bond owners was higher than that of investors of other assets. This is again an expected relationship for municipal bonds, considering the correlations between income, age and educational attainment. Eighty percent of mutual fund owners had at least some college education; while eighty-nine percent of all municipal bond owners had attained that level. Fully fifty percent of the municipal bond investors had at least a bachelor's degree.

TABLE 5. Characteristics of Investors in Money Markets, Treasury and Gold/Silver

VARIABLE	MONEY MARKETS	U.S. TREASURY	GOLD/ SILVER
AGE			
Under 30	5.5	3.8	12.6
30 - 39	19.5	11.3	24.4
40 - 49	17.7	15.1	31.9
50 - 59	22.7	32.1	15.1
60 - 69	20.9	30.2	13.4
70 +	13.6	7.5	2.5
	99.9[a]	100.0	99.9
	X^2=25.8*	X^2=17.7*	X^2=18.7*
EDUCATION			
Less Than High School	14.5	7.5	4.0
High School Graduate	14.5	22.2	20.2
Trade School	3.5	1.9	3.2
Some College	32.6	38.9	39.5
4 Year Degree	15.4	20.4	16.9
Graduate School	19.4	9.2	16.1
	99.9	100.1	99.9
	X^2=27.1*	X^2=10.6	X^2=22.0*
INCOME			
Under $10,000	5.9	0.0	4.2
$10,000-19,999	13.7	13.0	11.7
$20,000-29,999	24.1	20.4	25.8
$30,000-49,999	32.7	37.1	36.7
$50,000 +	23.6	29.6	21.7
	100.0	100.1	100.1
	X^2=64.5*	X^2=28.3*	X^2=29.1*
RESIDENCE			
Urban	50.0	38.2	41.1
Rural	50.0	61.8	58.9
	100.0	100.0	100.0
	X^2=6.4*	X^2=.29	X^2=.06

[a]Percentages may not add to 100% due to rounding
*p ≤ .01

U.S. Treasury securities were significantly more popular with investors over fifty years of age and with incomes of at least $30,000. These investors also tended to be rural residents and have some college education, but not necessarily a completed bachelor's degree.

The other asset category favored by rural residents was gold and silver. Gold and silver investment was found to be significantly more appealing to younger investors (30 - 49 years of age) than to older investors. Over two-thirds of the gold/silver owners reported incomes of between

$20,000 and $40,000. Almost three-quarters of these investors had at least some college experience.

Conclusions

From this analysis we see a picture of Nevada's investors as favoring secure savings accounts, individually selected corporate securities and money markets over precious metals, professionally managed mutual funds, U.S. Treasury securities and municipal bonds. Mutual funds, municipal bonds, individually selected corporate securities and money markets tended to be urban dweller's choices.

U.S. savings bonds and passbook accounts, individually selected corporate securities, and money markets have broken through age categorization in this sample more than have mutual funds, municipal bonds, U.S. Treasury securities and precious metals. This is not surprising for municipal bonds and Treasury securities when one considers the correlation between age and income, the greater minimum investment requirements of these assets, and the greater benefits of these investments to individuals in higher income tax brackets.

Individuals under thirty years of age in the sample were not active investors. However, according to this sample, when they do invest, they favor passbook savings, gold or silver, and, surprisingly, municipal bonds. A surprising finding for this sample was that eleven percent of the municipal bond owners were under thirty years of age. Thirteen percent of the precious metals investors were also in this age group.

These results bring out several possible implications for educators and investment professionals. Traditional saving avenues such as U.S. savings bonds, time deposit accounts and passbook accounts, are well recognized and utilized as investment media. Money markets are also widely accepted as investments, even though they are relatively newly available to most individuals. Commercial and educational information about money market investments seems to have been successful in attracting attention and investment dollars to this type of asset.

Individually selecting corporate stocks and bonds seems to be the next "step up" for our sample of investors after the savings deposit level. These securities were even slightly more widely held by our sample than were money market investments.

However, there seems to be a gap between ownership of individually selected corporate stocks or bonds and ownership of such assets through owning shares of mutual funds. Less affluent investors, unable to afford individual corporation's securities, may be overlooking mutual funds as an entrance to corporate markets. Furthermore, investors may be overlooking the diversification afforded by mutual funds.

The gap of interest in mutual funds among Nevada investors may be a result of investors' desires to manage their own portfolios instead of hiring professional management. This may also be a result of investment advice rather than of investors' individual decisions and planning.

A current profile of individual investor preferences and characteristics should aid financial management educators, investment advisors, and investment managers in providing the most useful information to appropriate clients. Based on knowledge of past asset accumulation behavior we can better predict future demand for various assets, as well as investor receptivity to information about the wide variety of currently available investment avenues.

The nature of the data used in this study did not allow for determining the relative importance of different assets in a portfolio based on amount of investment: the reasons behind individuals' ownership of specific assets; the method of acquisition of assets (e.g. by purchase or inheritance); nor the degree of activity with which the individual manages his or her portfolio. This current research analyzed ownership per se. Future research efforts could be directed to analyzing the above mentioned questions in an effort to empirically determine the effectiveness of individual investors' decision making, the extent of investor confusion when faced with rapidly developing new investment products, or the adequacy of professional investment advice.

Appendix 1

Discriminant Analysis of Demographic Differences: Investors and Noninvestors

VARIABLE	DISCRIMINANT FUNCTION COEFFICIENT
Marital Status	- .30
Age	.59 [a]
Family type	- .05
Education	.31
Income	.72 [a]
Residence	- .02

Eigenvalue = .05; Canonical Correlation = .22;
Wilks Lambda = .95; Chi-Squared = 40.35*

[a] key variable
* $p \leq .001$

Appendix 2

Discriminant Analysis of Demographic Differences: Investors and Noninvestors of Various Assets

VARIABLE	DISCRIMINANT FUNCTION COEFFICIENT
U.S. Savings Bonds	
Marital Status	.02
Age	.17
Family Type	- .45[a]
Education	.44[a]
Income	.66[a]
Residence	- .18

Eigenvalue = .04; Canonical Correlation = .18;
Wilks Lambda = .97; Chi-Squared = 28.00*

Appendix 2
(continued)

VARIABLE	DISCRIMINANT FUNCTION COEFFICIENT
Passbook Savings	
Marital Status	.01
Age	.76[a]
Family Type	- .13
Education	.51[a]
Income	.64[a]
Residence	.06
Eigenvalue = .03; Canonical Correlation = .18; Wilks Lambda = .97; Chi-Squared = 26.30*	
Time Savings Deposits	
Marital Status	.19
Age	.87[a]
Family Type	- .01
Education	.49
Income	.64[a]
Residence	- .04
Eigenvalue = .12; Canonical Correlation = .33; Wilks Lambda = .89; Chi-Squared = 92.56*	
Mutual Funds	
Marital Status	.00
Age	.73[a]
Family Type	- .13
Education	.64[a]
Income	.50[a]
Residence	.25
Eigenvalue = .10; Canonical Correlation = .30; Wilks Lambda = .91; Chi-Squared = 74.43*	
Municipal Bonds	
Marital Status	.22
Age	.57[a]
Family Type	- .03
Education	.62[a]
Income	.56[a]
Residence	.28
Eigenvalue = .03; Canonical Correlation = .18; Wilks Lambda = .97; Chi-Squared = 26.35*	
Treasury Securities	
Marital Status	.15
Age	.88[a]
Family Type	- .20
Education	.07
Income	.82[a]
Residence	- .14
Eigenvalue = .05; Canonical Correlation = .21; Wilks Lambda = .95; Chi-Squared = 37.29*	

Appendix 2
(continued)

VARIABLE	DISCRIMINANT FUNCTION COEFFICIENT
Gold/Silver	
Marital Status	- .05
Age	- .17
Family Type	.00
Education	.52[a]
Income	.65[a]
Residence	- .16
Eigenvalue = .03; Canonical Correlation = .17; Wilks Lambda = .97; Chi-Squared = 23.59*	
Corporate Stocks/Bonds	
Marital Status	.19
Age	.53[a]
Family Type	- .28
Education	.65[a]
Income	- .61[a]
Residence	.21
Eigenvalue = .14; Canonical Correlation = .35; Wilks Lambda = .88; Chi-Squared = 102.43*	
Money Markets	
Marital Status	.19
Age	.94[a]
Family Type	- .30
Education	.33
Income	.68[a]
Residence	.23
Eigenvalue = .13; Canonical Correlation = .34; Wilks Lambda = .88; Chi-Squared = 100.25*	

[a]key variable
*$p \leq .001$

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THE NORRIS CASE: IMPLICATIONS AND APPLICATIONS OF THE SUPREME COURT DECISION ON PENSION PLAN BENEFITS

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Abstract

In July 1983, the U.S. Supreme Court ruled in the case of ARIZONA GOVERNING COMMITTEE FOR TAX DEFERRED ANNUITY AND DEFERRED COMPENSATION PLANS v. NORRIS that it was in violation of Title VII of the Civil Rights Act of 1964 for an employer to offer employees a pension plan which has, as one of three pay-out choices, a pension benefit option that pays different benefit amounts to similarly situated male versus female workers. The insurance company that managed the employer-sponsored pension program used sex-based actuarial tables to determine monthly retirement benefits for the lifetime option. This paper examines the facts in the NORRIS case and considers the applications and implications of the Court's ruling with regard to individuals, families and Home Economists.

Introduction

In 1975 Natalie Norris, an employee with the Arizona Department of Economic Security, filed a class action suit against the State of Arizona (as the employer) charging discrimination based on sex as stipulated in Title VII of the Civil Rights Act of 1964. In NORRIS, the Court held that an employer could not offer a deferred compensation plan to its employees which paid out less per month in retirement benefits to female employees who were otherwise similarly situated to their male counterparts. Arizona employees had the voluntary option of receiving retirement benefits from one of several contracted insurance companies, all of which pay women who elect the life annuity option lower monthly benefits than men who have contributed equally. The Court found that it was not a valid justification that the actual cash value of the entire benefit would be approximately the same for the female group as for the male group. Although this result was based on the insurance industry's gender-based actuarial tables, the Court held that "even a true generalization about (a) class cannot justify class-based treatment," (1, p. 3498) under Title VII. Essentially, Title VII states that employers may not discriminate against employees based on sex, race, religion or ethnic origin in areas related to employment practices. Further, the Court found that Arizona exerted sufficient control over the plan so as to be liable for its discriminatory provisions. Finally, the Court reversed the lower courts' decision and denied retroactive relief. To understand the importance of the NORRIS case an analysis of the facts, arguments, decisions, and applications is necessary. Further discussion includes legislative action and insurance industry reaction to the Supreme Court decision, and concludes with a three part examination of implications for women, families, and Home Economists.

NORRIS

The NORRIS case is significant because it attempts to equalize pension benefits for all workers, requiring that retirement benefit options pay the same amount to all similarly situated employees irregardless of sex, and also because of its impact on other forms of insurance that base premiums and/or pay-outs on data from sex-based mortality tables. This case, and the legal battles that laid precedence for it, are part of the evolution of the influence of the women's movement. (For an excellent review of prior law, see 10, pp. 437-460.) In particular, the CITY OF LOS ANGELES DEPARTMENT OF WATER and POWER vs. MANHART (hereinafter MANHART (5)) upon which much of the NORRIS decision was based.

The MANHART decision prohibited employers from requiring greater contributions from female employees to a pension plan than from comparably situated males in order to be eligible for the same monthly benefits as males. MANHART related to the accumulation phase of deferred compensation plans, where money is contributed to a pension fund. In this case, the Court ruled it illegal to require female employees to pay more into the company's defined benefit pension fund (i.e., to make 15% higher premium payments) than similarly situated men because women, as a group, live longer than men. Because women live longer, the money that was contributed to their pension fund would have to be "stretched out" to last their expected lifetimes. To ensure that women receive equal benefits, the company argued, they would be required to pay larger premiums into the fund. The deciding argument was that life expectancy is determined by many factors, of which sex is one. In 1978, the Supreme Court held that, "requiring female employees to contribute more to a pension fund than male employees on the basis of sex-based actuarial tables constituted sex discrimination in violation of the Equal Employment Opportunity Act" (21, p. 33). In MANHART, unequal benefit payments were deemed discriminatory by the Court despite the "unquestionably accurate generalization that women as a class live longer than men as a class" (6, p. 76).

The NORRIS decision relates to a deferred compensation plan in which employees can defer receipt of a portion of their compensation until they retire allowing them the advantage of tax laws which provide a more favorable tax rate on post-retirement income than on pre-retirement income. Additionally, the plan provided in NORRIS, as with most other pension plans, was managed by insurance companies. Neither the contributions nor the benefits were defined.

"As of August 18, 1978 there were 1,675 employees participating in

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> the (Arizona) plan, 681 of whom were women. Of this number, 572 women had elected some form of future annuity option. (In) 1978, 10 women participating in the plan had retired and four of the retirees had chosen a lifetime option" (11, p. 919).

The deferral arrangement of the plan offered Norris, et al., was contributory, that is Arizona made no payment for employees, and had two phases: accumulation and pay-out. Neither phase was defined: specifying amounts due as premiums to become eligible for the plan, nor specifying amounts payable. In the first phase, employees could choose one of three options for investment of their deferred compensation: a mutual fund; a savings account; or purchase life insurance or an annuity contract. In the second phase, employees could choose one of three methods of payment: lump sum with which the employee could purchase on the open market the best benefit his/her accumulated funds could command; fixed monthly payments for a designated period (usually terms of 10 or 20 years); or as a life annuity (based upon the rates of any insurance company with which the Governing Committee had contracted). Under this option, female employees would always receive lower lifetime incomes than similarly situated males.

> "Under the plan, if Norris did not change the amount which was being deferred by her, and if she did not change her pay-out election, the total value of her account at age sixty-five would be $53,890.93 and her annuity payment would be $320.11 per month for life. If she were male, the total value of her account at age sixty-five would still be $53,890.93; however, the life annuity payment would be $354.06 per month because of the application of sex-distinct mortality tables which estimate different life expenctancies for males and females" (11, p. 921).

The pension plan provided to Arizona state employees violated Title VII of the Civil Rights Act of 1964, "because one of three payout options is a life annuity contract based on sex-based mortality tables and results in lower payments to female retirees than to similarly situated males" (7, p. 78). The Supreme Court ruled in favor of the plaintiffs.

Application

The social policy outlined in NORRIS, as well as other cases, suggests that actuarial classifications based on race or sex, are not permissible despite their valid actuarial basis. This policy causes economic consequences in the broad area of pensions, life insurance and other insurances.

Two components of pension plans that NORRIS may affect are explored: defined contribution and defined benefit plans. These are followed with options for compliance. Recall that NORRIS was neither a defined contribution nor defined benefit plan. In NORRIS, retired employees who chose the lifetime annuity option in the voluntary plan received benefits based on sex-related actuarial tables.

Defined contribution plans can be money purchased plans, profit sharing plans, thrift or savings plans, etc. They define the amount of the contribution to an individual's account to be paid by the employer and/or employee. Guidance for these cases is provided by MANHART. A plan may be contributory or noncontributory, which refers to the employee's requirement to contribute in addition to that made by the employer. The contributions are then invested. Benefits are based on the amount of money in an individual's account at the time of retirement. It is unusual for either plan to differentiate between similarly situated male and female employees. In 1980, less than 6 percent of all private pensions had contributions by employees, that is, most private pension plans are noncontributory (see 20), therefore, because the employer makes most contributions to pension plan funds, male and female employees should not feel an out-of-pocket impact of NORRIS on defined contribution plans.

A defined benefit plan requires that the employer pay a specified benefit to the employee at retirement which is commonly based on the employee's salary and years of service. Defined benefit plans often offer a 'normal form' of benefit (or lifetime annuity) under which an employee retires at 'normal' retirement age and seeks an annuity other than joint-and-survivor annuities, fixed period annuities, or other variations. So long as an employee chooses a 'normal form' the plan is generally on a unisex basis. One half of all defined benefit plans have unisex joint-and-survivor options as well as unisex lifetime annuities; however, for the remaining 50 percent, "if the plan offers optional forms of benefit, optional retirement ages or, in some plans funded on an individually allocated basis, ancillary benefits such as life insurance benefits, then these optional benefits will be affected by NORRIS" (11, p. 936).

There are three options for employers who wish to conform to the dictates of the NORRIS court: (1) eliminate all optional benefit plans, including the lifetime annuity option; (2) adopt a unisex approach; or (3) equalize all the optional plans, using a male- or female-based annuity rate, whichever is the most liberal, which would guard against the risk of too little money in the fund. Which solution is chosen might ultimately depend most on the administrative and other costs to the employer in changing the existing pension plan. Elimination of all other options reduces the flexibility of retirement programs and may force employees to take a lump-sum pay-out, suffer the resulting tax penalty, and seek an annuity on the open market. The unisex approach would equalize pension benefits by pooling all employees together and having a group average rather than a sex-based average for contribution and benefit determination. This would require the plan manager to know the total sex composition of the group to be serviced, or to use the sex composition of the general population. Either of these would require periodic

adjustments of annuity amounts. Administrative costs would not be as high, nor calculations as tedious, if the employer operated a large plan, wherein the gender mix of the group would be relatively stable and predictable (see 3). Lastly, the employer may choose the most liberal option factor in determination of contribution and benefit levels. Van Alstyne (1978) points out that this "topping up" is not in violation of the Equal Pay Act because it is a cost to the employer which "topping up" would involve, not a cost to the employee.

NORRIS has had a direct effect on employer-sponsored life insurance (as part of fringe benefit packages). In the past, if this choice was made, the insurance program was the same as that available in the marketplace and, therefore, had cash benefits based on the sex of the worker. NORRIS mandates such benefit amounts be equalized if contributions are made after August 1, 1983 (the effective date of the Court's decision).

Life insurance benefits as part of deferred compensation is perhaps the most difficult area of compliance for employers. The dilema has been that, " although the amount (of money) used to buy life insurance was the same for similarly situated males and females, the face amount of insurance and/or the cash value (was often) different ... (and) this result (was) in violation of NORRIS" (11, p. 940). Employers would either have to contribute more toward male employees' insurance benefits (to top-up to the female level of insurance premiums) or to find an insurance agent that would provide sex-neutral insurance benefits. Providing sex-neutral insurance benefits should not be a major obstacle as other annuity factors could be used. But, insurance industry analysts counter, saying that,

> "eliminating the use of gender in rating insurance would be unfair because it violated the rating principles on which all insurance pricing is based. Statistically, gender has been found to be one of the major accurate predictors of individual potential for insurance loss. To attempt to force insurance companies to stop using valid classification criteria such as gender in their rating plans is to legislate against the use of empirical knowledge" (16, p. 2).

They say that, "if Congress bans sex discrimination in insurance, women would pay a total of 360 million dollars more for life insurance" (25, p. 59). No agreement between the opposing sides has been reached.

Finally, let us explore the application of NORRIS to other forms of insurance available through employers. Group life and health insurance may be affected because the sex mix of the group affects the overall price, although it does not affect the sex-neutral group rates. However, the right of an employee to convert his/her health insurance upon termination of employment to an individual policy without further evidence of insurability (the employee's conversion right) may be affected. Conversion rights may be a technicality to be debated at some future time in the courts, but which does not appear, at face value, to be within the scope of Title VII.

> "Most women are covered by employer (health insurance) plans which, under the law, cannot discriminate. In the individual market, 24 percent of the policies sold to people under age 65 are already written on a unisex basis, as are 10 percent of the disability policies and virtually all of the medicare policies for people age 65 and up" (22, p. 8).

Employer-sponsored individual disability income plans may include sex-differentiate features, in which case, they would be in violation of the NORRIS decision. Pregnancy is a condition most often barring women's access to disability insurance.

Action and Reaction

The NORRIS court did not extend their decision to the open market insurance industry. However, since the NORRIS decision, there has been renewed legislative action and lobbying activities over the broad interpretation of NORRIS. Congress began the debate on the issue of discrimination in the insurance industry prompted by the interpretation of MANHART. If the legislature acts quickly, unisex pricing for pensions and gender-neutral annuity benefits, as well as other forms of insurance (such as automobile insurance), may become law by the end of 1984. As of this writing, House of Representatives Bill 100 was ordered out of the Energy and Commerce Committee, but has not yet filed a report, and the Senate Commerce Committee has had a mark up session, but has taken no further action.

The unisex bill considered in Congress would mean that, "women will gain better pensions and annuity benefits and will be enabled to buy disability insurance on the same terms that men do, but they would pay more for life insurance, and the parents of young girls would pay more for car insurance" (2, p. 4).

According to Laycock and Sullivan (1981) sex discrimination in insurance is obscured by fundamental differences between civil rights law and insurance law. Civil rights law indicates that discrimination on the basis of sex is illegal as related to work relations. Civil rights logic states that even "fair" insurance discrimination is illegal. However, the 'laws of insurance' indicate that fair discrimination necessitates classification of people into a pool of similar risks.

> "Insurance pricing is based on the law of large numbers. Companies must limit the criteria they use for classification of insurance risks to those which can be easily identified, those that are most objective in nature and that are likely to have the greatest impact on risk

exposure" (16, p.3).

But the NORRIS Court said that, "based on the historical context, the legislative history, and judicial interpretations of history ... Congress ... had no intention of declaring that subsequently enacted civil rights legislation would be inapplicable to any and all activities of an insurance company" (1, p. 3565). Congress has forbidden the use of sex as a predictor in employment even when it would be helpful or convenient to use it.

Since the reach of the NORRIS decision did not go into the 'open market' of the insurance industry, it is felt by women's advocates that, "employers will be encouraged by the insurance industry to convert their pension funding to the practice of providing 'lump sum' payments so women will be forced to buy annuities that are sex based from private insurers" (12, p. 543). Bernstein (1984) suggested that, "men now will have an economic incentive to take their newly increased lump-sum values and invest it in other ways, dropping the (employer-provided) lifetime annuity and any survivor options" (3, P. 82). Both men and women could lose by no longer having lifetime annuity options available.

The Wall Street Journal (1983) reported that insurers claim financial disaster would result if, "they begin paying women pension benefits equal to those of their male counterparts before funds to support those benefits were collected equally" (27, p. 8). However, the General Accounting Office indicated that, "a gender-neutral insurance system wouldn't impose extra costs on consumers or the industry" (27, p. 8). One estimate suggests the cost of 'topping up' would be 20 percent of total administrative costs as a result of NORRIS (see 13).

Regarding auto insurance, Quinn (1983) states that in most states, single women over 25 pay about 10 percent less than men, while younger women pay substantially less. Gray (1983) concurs with Quinn.

> "Women typically have fewer accidents than young men, so they pay less for insurance. Most women should pay less (for auto insurance), but not because they're women. The number of miles driven is the single best predictor of accident rates. It's a much better predictor than sex. If mileage were used as a standard instead of sex, women still would pay less" (9, p. 59).

Already, several states-such as Massachusetts, Michigan, and Hawaii-have banned differential auto rates for men and women. Montana has voted to eliminate sex as a rating criterion beginning in October 1985 (see 16). Generally, "unisex pricing would result in generally higher premiums for auto and life insurance and lower premiums for annuities and disability insurance for women" (9, p. 19). As individual states require compliance with the intent of NORRIS, an all encompassing Federal mandate to which the insurance industry would have to adhere may be suggested.

Conclusion

Shrouded in the guise of a 'women's issue' rather than a worker's issue, the NORRIS case has been fuel for a heated controversy over the impact of using unisex actuarial tables in employer-sponsored pension plans and the impact of NORRIS to other insurance contracts.

Considering NORRIS as a women's issue, women have been primarily concentrated in low-prestige, low-income jobs, often on a part-time basis. Predominantly employed in the service sector, they have not had the benefit of union representation which might look after their best interests in labor contracts. Availability of and opportunities to participate in pension plans has been minimal. When they do participate, because of the formula used to derive pension benefits (length of service/salary), their representation among the ranks of recipients and their retirement income from this source is likely to be negligible. Schultz (1980) stated that of the approximately 10 million women who participate in pension plans, less than half will actually receive benefits. With ineligibility for pension benefits, and eligible for meager social security payments, it is not surprising that 70 percent of the aged population in poverty were women in 1977 (see 24, p. 5).

Jorgensen (1982) suggests that the nation's pension system continues to think in terms of workers and dependents without considering the changes in our social and economic environments. Within the legal environment, the NORRIS case can promote regulatory changes, as witnessed in Congressional debates on the insurance industry.

As a worker's issue, the single-breadwinner, spouse-caretaker composition of families is no longer a reality. Dual worker families are the norm and their joint incomes are needed to maintain an enjoyable standard of living. NORRIS has benefited female workers who will gain pension income, but in a zero-sum game, men will receive less. If these do not balance out to equal greater family financial well-being, then satisfaction might only be derived from the psychic reward of the female wage earner and pension recipient.

Brannon (1980) discusses pension plans as deferred compensation and states that over a thirty year period, workers have lost financial ground by accepting this kind of pay for work. Workers gain only when they do receive benefits upon retirement, thus achieving the objective of redistributing their income over time.

Pensions will continue to play an important role in retirement income security for families as they are an essential ingredient to overall financial stability in retirement, but increased incentives should be made for individuals to accumulate personal savings for retirement. Careful planning is necessary. Shultz (1980) offers two arguments in favor of private pension plans: (1) private pension plans are flexible and can be tailored to meet differing situations and conditions; (2) they are vital to assure the saving necessary to provide sufficient investment in a growing economy. Kistler and Healy (1981) offer two alternatives to the present structure of private pension plans.

The lump-sum pay-out and the use of IRAs which could be used to 'roll over' annuities into accounts without, "incurring immediate federal income tax liabilities" (17, p. 236), or the establishment of IRAs for each employee instead of annuities. Combined, these are reasonable alternatives, but would put management of these funds into the hands of the family. In times of economic duress, families may use these funds, however, for goals other than retirement security.

It is acknowledged that families must often make complicated financial decisions, balancing short- and long-term goals. Concern about the economy and the ever-present potential for further interpretation of the law, such as NORRIS, can immobilize ability to make cost/benefit calculations within the family setting. "Families unable or unwilling to assume individual responsibility for protecting themselves in the financial and consumer markets or for taking advantage of planning incentives (e.g., tax breaks) may find their economic position deteriorating at the same time that social support is declining" (14, p. 18). This is where the role of Home Economists could become invaluable as educators assisting individuals and families in the decision-making process, as researchers identifying problems and searching for solutions, and as experts within the legislative arenas.

The reach of NORRIS stretches beyond employer-sponsored pensions and insurance options. It presents new uncertainties to families with regard to preliminary pension decisions, the wide scope of insurance coverages and costs, and tax implications of deferred compensation and savings program decisions.

Home Economists might begin by doing some self-inspection. What impact does NORRIS have on currently available pension plans and contracted insurance policies? What options does the pension policy offer the professional and his/her spouse? Home Economists might check to see what their own social security benefits are likely to be to get a fuller understanding of the interplay of retirement incomes. Is the collective bargaining unit representing professionals in our field responsive to the need for gender-neutrality and equal representation? Further, are these professionals aware of the personal advantages of IRAs and other individual saving programs? The exercise of putting ones own house in order can be useful when preparing to help others.

In their professional role, incorporation of NORRIS into financial management curriculum is obvious. Initially, those to whom we provide our expertise should be aware that they will need to make financial sacrifices in the short-run in order to achieve the goal of an adequate retirement income. Students should be aware of potential trade-offs in money management: use of limited money income for pension plan coverage versus life insurance or other savings programs; use of personal savings programs that often pay higher rates of interest versus use of pension plan investments. Some trade-offs involve risk as there is more individual control of the money in savings, and, therefore, an increased chance that the savings will be used for other than retirement income. Home Economists have the opportunity to develop educational programs that inform clients and suggest alternatives. Future changes force individuals and families to be flexible as they re-evaluate current retirement plans. For families to operate at maximum efficiency, the information has to be received and in a comprehensible form so that they can make essential financial decisions.

Extension agents must retool presentations about retirement planning as a result of NORRIS. The opportunity to offer workshops on a number of the intricacies of NORRIS abound. For example, they might consider a workshop on the tax implications of NORRIS on individuals and families; or on the total financial picture and strategies to maximize retirement income during a lifetime of earning; or perhaps a session devoted to pension definitions and consequences of particular choices.

Research can contribute to our knowledge base and is often the precursor to legislative action. In particular, collecting, validating, and analyzing insurance statistics and then disseminating the information in a useable form. What are the actual numbers of people affected by NORRIS, in what way, and what is the dollar impact? How will insurance company managers "survive" this new requirement? What effect will NORRIS have on the economy as a whole?

Aware of demographic changes, Home Economists should monitor the redistribution of national financial resources from the young to the old and guard against random refocusing of social supports. Also, Home Economists should closely watch changes in management practices and labor costs as unisex pricing may convince some employers that having female employees is more expensive than male employees, which would result in a new round of invidious discrimination. Such research efforts can provide evidence that leads to public policy action.

As pensions continue to be an important retirement income, several questions are raised that might be confronted in the legislature. These include the question of indexing benefits to keep up with the cost of living. Pensions are not typically indexed. What index would be used? What would indexing do to the pension managers who would face potential short-falls of funding levels? What would such a policy do, in total, for a progressive redistribution of income among the populace?

Another question is, will an increased dependence on pension incomes become the justification of a decrease in social security payments? If this is so, what would happen to the 'vulnerable majority,' that group of workers who are just above the poverty line and who are unlikely to receive any pension benefits?

How can policy regulations be rewritten to reflect a new national philosophy that retirement income security is for all elderly people, not just elderly workers? Should this be done? If it is not, in light of the increasing numbers of elderly, what will these aged do to existing social support programs?

As a consequence of the aging of the baby boom generation, what will be the public policy with regard to maintaining the average retirement income of the aged? The consequences may be the need for the elderly to supplement retirement incomes with earned income, or to accept lower standards of living. The possible social, economic and political tensions of such changes requires planning and re-examination of the objectives of retirement income goals. We need to question program purposes and suggest arrangements that more accurately reflect a changing social profile and economic reality.

Historical and institutional retirement practices will not miraculously disappear. The struggle for equity may produce more retirement plans, more complex rules, and more record keeping for individuals. A watchful eye is needed to insure that such changes are in the best interest of the individual and family. Home Economists' educational programming and research can act as a trigger to enlighten and/or change public opinion and may act as a catalyst for legislative action.

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SUPPORTING ADULT VOLUNTEERS AS NON-FORMAL EDUCATORS

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Abstract

This paper will address how we as professionals can support adult volunteers as non-formal educators in order to extend our subject-matter expertise to the 4-H audience. The first part of this paper presents a set of philosophical premises upon which such support can be structured. The later part offers an example of how these premises may be applied to the development of a training workshop on resource management for 4-H leaders.

Rationale for Focus on Adult Volunteers

Non-formal education is a significant part of what we as educators are involved in personally and also train our students for. Ganong and Colman (3, p. 121) state that "professionals responsible for parent education consistently encounter the problem of maximizing community impact with limited funds and personnel. A partial solution may be to use committed volunteers...Dedicated enthusiastic volunteers can be trained to do everything from recruiting parents to writing summary reports. Using volunteers, it is possible to create a ripple effect for the professional's expertise". While the focus of the article from which this excerpt was taken is parent education, the statements may be generalized to other aspects of Family Life Education. For example, the words "youth education" could be substituted for "parent education" and "recruiting members" for "recruiting parents". This would give a description of a program which has already turned to volunteers as the primary source of delivery for its educational programs. This is the 4-H program, statewide and nationally.

"The mission of 4-H is to assist youth in acquiring knowledge, developing life skills, and forming attitudes which will enable them to become self directing, productive and contributing members of society. This mission is carried out through the involvement of parents, volunteers and youth educators who organize and provide educational and subject matter experiences in community settings."

"Volunteers are the paramount and essential significant element of the 4-H program in Hawaii. They play many roles... The primary 4-H volunteers are those who teach young people." (2, p. 9).

Given the significant role that these volunteers play as educators, a concern for the professional/support personnel is the nature of the support and training these volunteers receive. This is an important consideration because it has direct implications for the success of the educational programs provided by 4-H and thus the degree of "ripples" that extend out into the community.

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Strengthening volunteer leader effectiveness is a key focus of the Hawaii State 4-H program through 1986. Development and execution of a 4-year plan of volunteer training and development is one of the priority means of achieving this goal. The following are some basic philosophical premises upon which such training and development may be built.

Philosophical Premises

The learning process is a multifaceted one and thus, the effectiveness of such a process is dependent on many factors. The educator/facilitator of learning must be attuned to these factors and give careful attention to them in the planning, implementing and evaluating of any learning experience. Much of the literature on adult education suggest that the adult learning process is significantly different from that of earlier life stages, that the adult learner has unique needs which must be addressed in teaching and learning strategies developed for them (1, 5, 10). This discussion then will focus on some of the factors affecting the effectiveness of the adult learning process.

Planning

Planning involves a specification of the outcomes one desires from the process to be engaged in, a determination of the resources available to achieve those outcomes and a selection of a methodology to obtain those ends. Desired or anticipated outcomes are generally specific to the topic under discussion and the purpose of the learning experience. There are, however, more general outcomes that may be thought of as overall aims or goals of adult learning experiences. These are, as described by Jones (5, p. 7), the aims of empowering students, of making them increasingly independent of teachers...of helping them to clarify what they want to do and then to develop the skills and understanding to do it well... to think logically about the subject matter... to relate it to their own real lives and to be able to rely on accessible resources, on peers and on their own experiences for their continuing learning.

Acknowledgement of these larger aims reveals an invaluable resource that can be utilized in the learning process, that of the learner's own life experiences. Tapping this resource reinforces the aim of empowering the learner.

In terms of methodology, Olson and Moss (9, p. 392) suggest three strategies for presenting information, each a different combination of the techniques of a) identifying concepts and defining principles, b) illustrating concepts and c) demonstrating use of concepts. The strategies are:

1. define, illustrate and demonstrate.
2. illustrate, define and demonstrate.

3. demonstrate, define and illustrate.

In selecting methodology, one must consider the desired or anticipated outcomes of the learning experience. Mezirow (8) suggests that there are three interrelated but distinct learning domains, each of which has its own learning goal. Each goal suggests a different mode of learning reflective of different learning needs. Each goal requires a different approach to facilitate learning. It would appear that ineffectiveness in the educational process is often a result of using teaching/learning strategies which are inappropriate for the domain being dealt with. Mezirow states that "to be able to facilitate learning, adult educators must master the professional demands of all three and become adept at working with learners in ways that will be sensitive to both the interrelatedness and inherent differences among them" (8, p. 20).

Along similar lines, Hunt (4) suggests that there are four conceptual levels which might be descriptive of learners. Each level requires the assuming of a different role by the educator and the use of a different approach to facilitate the learning process. Hunt states that matching an appropriate teaching strategy to the conceptual level of the learner is the most effective means of education.

Regardless of the strategy used, the planner may benefit from incorporating the following suggestions that Ammons and Giordano (1, p. 68) have found useful in designing effective curriculum for family life education:

1. active, participative learning should be used whenever possible.

2. teaching and learning for integration should include a blend of cognitive, affective and behavioral-skill components.

3. no more concepts should be presented than time will allow the learner to process.

4. the learning process should include material that will stimulate or trigger perceptual openness to change.

5. the optimal learning event facilitates learning from all relevant experiences--past, present, and anticipated future.

The extent to which these are attended to in the planning (and implementation) of a learning experience(s) may influence the degree to which learners assimilate and integrate the knowledge gained from the experience into their everyday lives (an assumption of a desired outcome).

In a similar vein, Mace (6, p. 604) speaks of the need to deliberately create a special environment which allows the transition from knowing to doing to take place. Some of the elements of such an environment would be:

a. leadership provided by members of the same social unit as the group.

b. a relaxed and informal setting.

c. knowledge shared as a relational experience offered to the group.

d. participants given opportunity to apply concepts to own situation.

e. exercises for experimenting with new ideas provided.

f. opportunity to plan future goals in light of the experience provided.

These ideas support the point raised by Zemke and Zemke (10) that integration of new knowledge and skill require transition time and focused effort. Allowing for this transition time and providing focused effort in the planning and implementing of the learning experience may result in a greater depth of learning, with greater meaning/relevance for the learner.

As previously indicated, although somewhat indirectly, attention must be given not only to the educator's anticipated outcomes but also to the role of the learner in the process of reaching those outcomes. According to Zemke and Zemke (10), adults seek out learning experiences in order to cope with specific life-changing events. They also state that the learning experiences adults seek out are directly related to the life-changing events that triggered the seeking. With this in mind then, educators must attend to the timeliness of the learning experience in their planning, recognizing that there may be "teachable moments" in the lives of adults. This premise is further expanded by Ammons and Giordano (1) who state that adults are motivated to learn as they experience needs and interests that learning will satisfy. These needs and interests which are sources of motivation for the learner are the basic building blocks upon which a learning experience(s) should be built.

In planning, addressing learner anxieties may also be useful. According to Jones (5), adult learners bring with them all their previous learning experiences and anxieties. These anxieties, if not attended to, may interfere with the learning process. Taking both anxiety and motivation into account may help in building a climate of trust in which both teachers and students can take the risks which learning involves.

Implementing

Implementation involves the delivery of the learning experience. According to Ammons and Giordano (1, p. 71) delivery of educational programs may be enhanced by attending to process as well as the content of the program. They suggest the following as ways to deal with process:

a. establishing ground rules that encourage participation and reduce threat.

b. establishing group comfort and safety before inserting content with high emotional risk or involving self evaluation.

c. not presenting new conceptual material at the end of a workshop when it cannot be processed and integrated.

d. observing and responding to group process problems.

Implicit in these suggestions is the premise that facilitating is a critical aspect of implementation.

Facilitating involves the creation of an environment which encourages movement toward the learners and educator's desired outcomes. Such an atmosphere, according to Ammons and Giordano (1) would encourage an equalitarian, non-judgmental, accepting, supporting milieu. It is an environment which is both physically and psychologically comfortable (10, 5).

The educator has a primary role in facilitating or encouraging the flow of the learning experience. Some of the characteristics which may aid in the effectiveness of one's role as a facilitator follow. An effective facilitator:

a. is flexible and adaptable.

b. is sensitive to the needs of the learners.

c. can maintain some degree of focus, either bringing discussion back to a focal topic or tying together seemingly disparate ideas.

d. can pose appropriate questions as needed to stimulate discussion.

e. guides and participates in group process but does not dominate it.

f. models involvement in the learning process.

g. can maintain some degree of objectivity.

h. is able to bring closure to a process but also to extend participants' thinking beyond the topic at hand.

i. doesn't assume total responsibility for the success of the experience.

Zemke and Zemke (10, p. 52) sum up the art of facilitating in the following statement. "The key to the instructor role is control. The instructor must balance the presentation of new material, debate and discussion, sharing of relevant experiences and the clock." That this kind of facilitative control is often gained when one is willing to risk giving up total control is an important consideration for the educator.

Giving up total control of a learning experience may result in changes in plans, including the focus of discussion and the methods to be used. Each group and each setting is unique and thus adjusting is an implicit part of the process of implementing. Making adjustments as needed and as appropriate reinforces the ultimate aim of the educational process, that of attending to the needs of the learner.

Evaluation

Evaluation is an essential part of the development of teaching/learning strategies. Evaluation provides feedback to the educator in terms of what has been achieved in the way of learning. It also provides a basis for assessing what may have contributed to particular outcomes, information which may be useful in modifying plans for future use. Evaluation to be meaningful, must address the anticipated outcomes that were part of the original plans, learner outcomes in particular.

Application of Philosophical Premises to Workshop Development - A Summary

Rationale

Management is a concept that is sometimes tricky to teach. Perhaps it is because management is such an integral part of almost everything we do that it is both simple (most people are familiar with the term) and complex (try to explain it in one or two sentences) at the same time.

To assist our Hawaii 4-H program in the area of management education, a new series of Resource Management project books were recently developed. The need for a Resource Management leader training workshop to accompany the introduction of these new books was evident from reactions to an early draft of the project books which was circulated among Cooperative Extension agents and several 4-H leaders.

Based on the concept of "teachable moments" discussed by Zemke and Zemke (10) it would seem appropriate to have the workshops coincide as closely as possible with the introduction of the new Resource Management project books. The availability of the new project presents a new challenge to the leaders - "what do I do with this now that I have it?" If this question can be answered when it is first raised, it may generate more interest in and support for the project.

Objectives

The objectives were selected because of feedback from some 4-H leaders regarding their previous participation (or non- participation) in management projects. They indicated that they were not comfortable in trying to get their 4-H ers to undertake the project when they themselves were not sure what management involved. One leader indicated that once she had a grasp of the subject, she had very little trouble taking it from there and developing her own activities for her club members. This then is the basis for focusing on the objectives listed below.

a. To assist 4-H leaders in gaining basic understanding of resource management concepts.

b. To assist 4-H leaders in feeling comfortable with the subject of resource management and in sharing their ideas about it.

c. To provide a setting which will encourage 4-H leaders to generate ideas for "picking up the management project and running with it."

Basic Message and Delivery

The basic message of the workshop consists of the following points:

a. Management is a skill that can be learned.

b. It is a necessary part of everyday life because we all must deal with resource limitations.

c. Our everyday management experiences can be drawn upon to help others learn about management.

This message will be delivered using the guidelines and format set forth in Table 1. The table illustrates a planning tool which may be useful in the development of any kind of a workshop. Its key feature is the inclusion of the guidelines that are to be followed to empower the learner with the confidence as well as the skills to pursue further knowledge and/or to share it with others.

Unexamined Assumptions

Educators and/or learners often hold assumptions about themselves, each other or the subject-matter under discussion, assumptions which for the most part have not been examined for their validity. These unexamined assumptions may influence the receptivity of the parties involved and thus the quality of the exchange of information among them. Recognizing and addressing these unexamined assumptions may be a useful exercise in the workshop process. Some common unexamined assumptions related to resource management are listed below.

a. Management is learned by imitation rather than conscious effort.

b. A person is a poor manager if he/she is unable to meet all of the wants and needs that one experiences.

c. There are rules for being an effective manager.

d. Efficiency is a sign of good management.

Evaluation

Evaluation, to be meaningful, must address the outcomes as anticipated in the designing of the learning experience. In particular, evaluations need to capture the learner's perspective of whether or not anticipated outcomes were actualized. The following is an example of a simple evaluation tool which may be used for this purpose.

The most significant thing I learned from today's session is _____

_____

_____

The question(s) that remains uppermost in my mind at the end of today's session is(are) _____

_____

_____

I wish we had more time to _____

_____

_____

Summary

The workshop outlined in Table 1 is designed with the overall aims of adult learning experiences described earlier in this paper in mind. These were "the aims of empowering students, of making them increasingly independent of teachers ... of helping them to clarify what they want to do and then to develop the skills and understanding to do it well ... to think logically about the subject matter ... to relate it to their own real lives and to be able to rely on accessible resources, on peers and on their own experiences for their continuing learning" (5, p. 7). A true test of our effectiveness as educators is the extent to which we can meet these aims as we develop teaching/learning strategies not only in support of adult volunteers as non-formal educators but with all of our clientele.

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Table 1. OUTLINE FOR 4-H LEADER TRAINING WORKSHOP ON RESOURCE MANAGEMENT

Guidelines	Workshop Flow	Materials	Approx. Time
Deprofessionalize educator's role Establish safe and comfortable environment to facilitate sharing, include mechanisms for getting/ receiving feedback.	Presentation of topic: Understanding resource management or making it work with what we've got; explain format and participants' role, use short story to introduce topic of management	Seahorse story from Mager: Preparing Instructional Objectives (10); Management project books and Leader's Guide	5 min.
Start with relating to self and one's own reality. Provide opportunity for learner to recognize self and peer as resources.	Activity: Responding to "If I only had more _____" series of questions. Discussion of why we often find ourselves making statements such as these (focus on resource limitations) If appropriate, follow with short presentation on why management is necessary.	Pre-printed questionnaire (Overhead transparencies) optional	10 min. (5 min.)
Be brief and to the point. Include learner reality.	Provide brief explanation of what resource management is and what it involves, using examples familiar to audience.	Overhead transparencies; Leader's Guide	15 min.
Provide opportunity for learner to recognize self and peers as resources	Discussion and sharing of responses to questions and personal strategies for either getting more of those resources or coping with not being able to get more, followed by group summary of management strategies. Relate discussion as an activity which teaches about management.	Blackboard-list ideas as shared (if small group) or have groups make lists on large pieces of paper	20 min.
See usefulness of theory/concept/ idea for dealing with own life experience.	Activity: Brainstorm ideas for individual or group activities which can be used to help others to better understand values, goals, resources, purposeful behavior (management), followed by sharing of ideas.	Large pieces of paper for groups to write on, felt pens	20 min.
Attend to usefulness of learning experience	Conclusion: Offer challenge to take 1 or 2 ideas and develop them more fully, submit for compilation into resource packet.	Resource list for participants to use to develop ideas	
	Evaluation	Evaluation form	5-10 min.

EVALUATION OF ECONOMIC IMPACT OF KENTUCKY STATE UNIVERSITY'S FAMILY DEVELOPMENT AND MANAGEMENT PROGRAM

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Abstract

This study was undertaken to provide in-depth systematic documentation of a family education program designed for limited resource families in Kentucky. The study's objectives included refinement of a data collection instrument that would adequately chart the progress of participant homemakers. In addition, the study intended to facilitate assigning monetary values to selected practice changes and to formulate descriptive summaries of the homemakers. The questions on the data collection instruments related to the homemakers' skills, knowledge, abilities and practices in nine primary program areas in addition to demographic characteristics of participants. The results of the study indicate that limited resource families make positive changes during their enrollment in the FDM program. It revealed that the families have limited educational experiences and often lack basic skills related to the home. However, they are able to learn and practice these skills which allows them to save money or extend their income.

Introduction

Today, most families must perform a balancing act. They try to balance budgets, prepare nutritionally balanced meals and balance the changing needs and roles of family members with available resources. Families with limited resources have an even tougher time since needs almost always outnumber resources.

To help families accomplish this balancing act, the Kentucky State University Cooperative Extension Program (KSU-CEP) initiated the Family Development and Management (FDM) Program in 1972. The program's overall goal is to provide educational information to "hard to reach," previously "unreached" and "disadvantaged" families and to help them improve the quality of their lives and environment. The philosophy behind the FDM Program is to help limited resource families learn how to manage the resources they have and how to obtain additional resources.

This goal is achieved primarily through the work of paraprofessionals. Paraprofessionals are employees of the Cooperative Extension Program who work directly with homemakers in twelve Kentucky counties on a one-to-one or small group basis. They are supervised by the county Extension agent for home economics. With input from the homemakers, the paraprofessionals help in assessing the families needs, and this assessment is used to determine which of the family education topics offered to enrolled families will be emphasized with the family members.

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The families are enrolled for no longer than two and one-half years, with many graduating or leaving the program before the time limit. The paraprofessionals visit the homemakers one or two times a month to provide individual instruction. Additionally, paraprofessionals receive monthly training to keep up-to-date. This training is provided by the FDM area coordinators and covers subject matter topics, teaching and motivational techniques and policy and procedure changes.

Prior to this study, some information was collected about program families through informal data collection procedures. However, we recognized that more in-depth systematic documentation would be needed for program management as well as internal and external accountability. Therefore, this study was designed to utilize more formalized data collection procedures that would adequately chart the progress of homemakers enrolled in the FDM program. More specifically, the objectives of the study were to:

1) refine a data collection instrument to collect information about homemakers when they entered the program and periodically thereafter.
2) assign monetary values to areas of change in housing, clothing and nutrition.
3) describe the demographic backgrounds of participants and compare their similarities and differences in relation to income, age, race, education, number of family members and participation in family assistance programs.
4) describe stages that homemakers go through when implementing various program objectives.
5) reveal new information about the program and limited resource families for use in determining program direction and future research needs.

Methodology

Since the study was based on an existing program, regular program reporting forms and data collection devices were utilized. In addition, a homemaker progress record instrument was further developed and refined for use in this study. Demographic characteristics of participant families were collected by the paraprofessionals on a List of Families report form.

Instrument Design

An advisory committee was established to examine program goals and objectives, critically review current methods of data collection and offer advice on the revision of a survey instrument. The committee included Extension educators and administrators, as well as colleagues from the University of Kentucky teaching faculty and the Kentucky State Department of Education.

With suggestions from this advisory committee and input from Extension field and state staff, the family progress record was revised. Its re-design

allowed the paraprofessionals to document some of the participant homemakers' abilities, skills, practices and knowledge as they entered the program and at specified time intervals thereafter. The progress record focused on the nine primary subject matter areas of the FDM program: community resource awareness, money management, family decision making, home management, family life, health care, food and nutrition, housing and clothing.

Interview and Instrument Training

Paraprofessionals, supervising agents and area coordinators received training about the data collection instrument and interviewing techniques to be used when collecting data. The paraprofessionals collected the information through personal observations and personal interviews with participant homemakers.

The revised Family Development and Management Progress Record was pre-tested in Kenton County, Kentucky with fifty program participants. These program participants had been in the program for at least six months, were generally white, between the age of 25-55 and had less than an eighth grade education. Comments were received from the paraprofessionals, agents and homemakers, and some further revisions of the instrument were made.

Regardless of the enrollment date, a progress record was completed for each participant homemaker and baseline date recorded. The information recorded on the progress record and demographic information collected from the List of Families report form was keypunched for computer storage and analysis.

Timeline

The study period was from October, 1981 to August, 1982. Paraprofessionals submitted the progress record on two dates: April 1, 1982 and August 1, 1982. The April 1 recording included completion of column 1, baseline and 2nd column skill and/or behavior as of March 31, 1982. The August 1 recording included 3rd column skill and/or behavior as of July 31, 1982.

Assignment of Monetary Values

The assignment of monetary values to designated items was based on research in the Frankfort, Kentucky area. Some cost estimates were based on the average dollar savings possible between the retail cost and the cost of materials to make the item. Other estimates were obtained from a research of literature.

Analysis

Descriptive statistics are used to present information derived from the various instruments and procedures. Percentages are presented in tables to quantify the dimensions being measured and described in this study. Interpretation of results were made through comparison of these figures. Detailed statistical analysis procedures are not presented here although further work is underway to explore the relationship among selected variables. Variations in the percentage of homemakers who answered the questions may cause statistical interpretation to be oversimplified or misleading. Thus, the reader is encouraged to provide his or her own interpretation of what is "significant," recognizing that an error of measurement is present.

Demographic Characteristics

FDM is a continuing program. When this study began, 920 homemakers were enrolled. During the period of the study - October, 1981 to August, 1982 - some families left the program and new participants were added. For the purposes of this project, a study group was designed from the 868 homemakers who were enrolled from October, 1981 until August, 1982.

Homemakers in the program shared several characteristics. The following summarizes and compares some of the demographics of the participant homemakers.

Age - The majority of homemakers in the program were 25-55 years old (59%), with twenty-one percent more than 55 years of age and twenty percent less than 25 years of age.

Educational Level - Only thirty-six percent indicated they had completed the eighth grade, leaving sixty-four percent with less than eight years of formal education.

Race - Seventy-one percent of the FDM homemakers were white, and twenty-nine percent were black.

Sex - Homemakers participating in the program were almost entirely female (99%).

Income - Families were generally below the official United States government poverty level. The 1982 United States Census Bureau statistics established the poverty level for a family of four at $7,412 a year. Almost all FDM homemakers (92%) had annual incomes less than $7,452. Thirty-five percent had incomes less than $3,780 annually.

Area of Residence - The majority of program families lived in rural areas (71%). This reflects the program's geographic concentration in rural counties: ten of the twelve program counties are considered rural.

Family Size - The majority of the homemakers had between one and three family members (61%), while thirty-five percent had between four and six members and four percent had seven or more family members.

Food Stamp Participation - Since a majority of participant families are designated economically below the poverty level, one might reasonable assume that most if not all of the families would participate in the federal food stamp program. However, only sixty-four percent indicated that they received food stamps.

Other Federal Assistance - Homemakers were asked if they received other federal assistance besides food stamps, and fifty-two percent said they received assistance from other agencies. This

includes participation in the Womens, Infants and Children Program (WIC), Aid to Dependent Children (ADC) and other forms of welfare assistance.

Conclusions

In presenting the findings of this study, the reader is cautioned to note that all the limited resource families involved in this study were enrolled in the FDM program and were not randomly selected. Since one intent of the study was to refine a survey instrument that would allow homemakers to be "tracked" as they progressed through the FDM program, the entire population was used. The need to use the information for program management and accountability also made it desirable to survey the entire group. Therefore, any assumptions made about limited resource families in this study may or may not be applicable to other limited resource families.

The Typical FDM Homemaker

The results reveal that a typical homemaker enrolled in the program is white, in the twenty-five through fifty-five age group, has less than an eighth grade education, lives in a rural area, participates in one or two federal assistance programs, has one to three family members and an annual income less than $5,000.

What Monetary Savings Occured?

Monetary assignments made to the areas of food preservation, toy construction, housing repair and clothing, show that the families were able to save more than $158,000. Because most of the skills learned are considered "life-time" skills, a figure of more than 19 million dollars could be assumed in money saved by multiplying $159,758 by 20 years and that figure by an average inflation rate of 6%. This does not take into account the number of families who were able to acquire skill and knowledge that enabled them to earn more money and/or become self-sufficient from domestic assistance programs.

What Community Assistance Was Needed by Families?

As measured by the survey instrument, most homemakers entering the program needed health and welfare assistance and continued to need this assistance throughout their enrollment. This need for health care, possible coupled with an increased awareness of the services offered by community health clinics, resulted in an increased use of these services. These homemakers are apparently typical of other low-income families in which studies indicate that they know very little about public health programs (9, p. 115) and are not very well informed about preventive health measures (4).

Did Changes in Behavior, Knowledge and Skill Obtainment Occur?

On the average, paraprofessionals visited the homemakers twice a month. This resulted in at least two to four hours instruction a month.

According to the results, FDM homemakers made changes in many areas of their life during the time in which the survey was taken. Specific areas of change are discussed under the nine major areas.

Money Management

Maximizing resources is certainly an important consideration for the limited resource family. With the few resources that are available to them making the best use of what they have is critical. However, estimates made from research done in the 1970s suggested that twenty-five percent of personal expenditures reflect a loss due to haphazard, non-satisfying purchases (3).

FDM homemakers began making positive changes toward becoming more effective consumers. They generally adopted practices of preparing a budget and following it. However, they only made a slight improvement in attempting to pay for credit purchases when due and made almost no attempt to make a full payment on credit purchases. They also continued to make the minimum payment. This may be due to the fact that these homemakers, like other low-income families, use credit for the feature of installment buying and feel less of a need to pay off the purchase debt immediately (8). This is typical of low-income groups which tend to have a higher proportion of income in outstanding credit balances than other groups (11).

Perhaps FDM homemakers are similar to other low-income groups that use consumption as one way in which they can make some attempt to obtain the great American dream of success. Caplovitz states that many upper income people use consumption to symbolize social superiority, and the lower income people's use of consumption may represent compensatory consumption (2). Regardless, FDM homemakers appear to have begun planning purchases although management of credit use is still a problem.

Family Decision Making

Decision making by consumers is often influenced by their own position in society and the surrounding environment, be it economic, social or political. According to Paolucci, Hall and Axinn, (12), regardless of the number of environments in which the family makes decisions, that environment either constrains or offers opportunities for the family.

FDM homemakers make the majority of the decisions about the way money is spent. This finding is consistent with other studies of low-income groups which indicate the wife has more influence in the family decision making. This is perhaps reflective of the traditional values held by this group; the man earns the pay and the woman plans how to spend it (7).

FDM homemakers decreased their impulse buying and increased comparison shopping techniques. These techniques are often a great help for these families who generally are repetitive high impulse buyers.

Comparison shopping is a helpful technique for these families and when it is coupled with consumer redress, they both become effective consumer practices. Low-income families do not tend to seek redress if a product fails. Often they do not know what to do or where to go. FDH homemakers increased their knowledge and practice of consumer redress which hopefully made them more effective consumers when combined with the other positive methods they began practicing in money management.

Home Management

FDH homemakers began to involve more family members in completing household chores, especially their children. They also began to plan a system for doing this work and carrying out this system. Planning ahead is often difficult for people with low educational levels (7) since it requires some level of educational ability and knowledge. Through the processes of planning taught in the FDH program, homemakers were able to acquire information and skills needed for planning where formal education may have been lacking.

Family Life

When parents know the basis of child development and practice human, growth-enhancing techniques, the stream of maladjusted youth may abate (1). Spending some time with the children in addition to the maintenance functions is a beginning step in helping families realize how important they are to their children. FDH homemakers greatly increased the time spent with their children. This is a positive step in child development since low-income families tend to be more traditional in raising their children by providing only maintenance functions (providing food, getting rest, etc.) while the more affluent tend to give greater emphasis to developmental principles (7).

This additional time should enhance the positive parent-child relationship needed for a healthy family.

Health Care

A major way of holding down health care costs is appropriate use of health services, including what the individual does for himself or herself. Physicians have concluded that at least twenty-five percent of the illnesses they see in general practice are ones for which self-care could have been substituted. Prevention can reduce costs even further. Since the need for health care is one of the immediate needs of homemakers, use of services and prevention techniques were of concern. FDH homemakers increased in their use of the community health clinic and acquired the skills to administer basic first aid. They took a remarkable interest in preventing health problems by establishing a basic first aid kit.

Consciousness of personal health improved as FDH homemakers started exercising more and losing weight. Many others reported "trying" to lose weight. Since thirty percent of the homemakers were considered overweight and weight reduction is considered the best protection against heart disease (5), homemakers were taking steps to prevent more serious health problems. Additionally, many may have been trying to lose weight because of the personal look they desired.

Food and Nutrition

FDH homemakers changed considerably in the areas of food and nutrition. They:
- adopted practices of planning and preparing nutritious meals.
- increased use of fruits and vegetables in their meals.
- began trying new ways of preparing foods such as broiling or steaming.
- began eating more nutritious breakfasts.
- preserved more food from their gardens.

Homemakers also experienced changes in how they plan for the food they prepared. Many began practices that allowed them to budget their food dollar through the entire pay period. This is a large step for many to take since many low-income families tend to spend twenty-five percent of their income on food (6, p.16).

Housing

Improving the home environment helps create a sense of identity, combats feelings of alienation and rootlessness and is an outlet for self-expression. FDH homemakers increased their ability and skill to do simple home and winterization repairs. However, the repairs made were probably done more for personal immediate comfort and need instead of possible future savings.

Clothing

Constructing, repairing and remodeling clothing are significant methods of stretching the clothing dollar, particularly for young and low-income families. FDH homemakers increased their ability to make and recycle clothing and increased the number of items they completed for themselves. Those who had or acquired skills in clothing construction indicated they received as much personal satisfaction from completing something that they or others enjoyed as much as the fact that it allowed them to extend their clothing dollar.

At What Rate Did Changes Occur?

A surprising finding from this study was that homemakers made the most changes during the first few months. This could have occurred for numerous reasons. Perhaps they knew so little that a slight change in one or two areas made a big difference overall. The rate of change could also be influenced by the fact that the initial concern and interest expressed by the paraprofessional is so welcome and so new to the homemaker that she may try harder. During the following months of enrollment, the homemaker may become more comfortable with the relationship and exhibit less of an immediate need to change behavior or practice. Of course, uncontrollable influences play havoc in their lives and make them more susceptible to interrupted periods and loss of control over situations and plans.

Limitations

The homemakers in this study were active participants in the program. A control group was not used since the study was developmental in that it set out to develop an acceptable instrument for program participants. Further refinement of the instrument and its application to a random sampling the population is needed in order to make more definitive statements about changes that are attributable to the months of program enrollment and to what the efforts of the FDM program were the reason for the changes.

Other elements that were limiting factors in the study are given below:

The skills and abilities of the paraprofessionals could have influenced the amount and quality of the information the families received and the paraprofessionals' ability to collect the survey information.

The survey instrument may have been difficult to use because it was lengthy and some of the information was of such a personal nature. However, paraprofessionals indicated they were willing to collect information on the families as long as it did not jeopardize the relationship between them and the homemaker.

The time line periods were initially bi-annual but were changed to meet other program considerations and therefore were not equivalent in months.

Some of the behaviors studied require more time before conclusions can be drawn.

Some baseline data was collected retrospectively, therefore it leaves room for some degree of error.

Validity and reliability of the instrument itself was a limitation. Although there was general agreement on the importance of the nine major subject areas, selecting proper indicators for each is problematic. The factors also underwent numerous adaptions to facilitate program management and accountability needs. Therefore, the measures need to be considered at face value.

Recommendations

Limited resource families come from various backgrounds and experiences and vary to a great degree in ability, skills and knowledge. Therefore, it may be virtually impossible to develop a study that determines, with a high degree of accuracy, the most effective method of practice-adoption by this group. However, some simplification of the instrument is possible and necessary to establish reliable measures. A process of collecting data on limited resource families, what changes they are willing to make and at what level they will make changes, will assist others who desire information on what types educational efforts are most often implemented.

Limited resource families do not live in a vaccum and if any part of their situation is to be changed, their entire life situation must be considered. Additionally, these families, who are high users of domestic assistance programs, tend to place a drain on the resources of any county, state or nation. Therefore, programs that indicate ways to assist these families in improving their life situations will have an impact on the larger society.

Although criticized for being an expensive method of affecting change, one-to-one contact still appears to be the most feasible method of educating limited resource families. Caplovitz says: "the chief problem of an educational program for low-income consumers is not so much breaking down the resistance to messages but finding the appropriate media for communication to the consumer." He further notes that "direct, personal contact will clarify and reinforce messages and provide social support for the intended change or behavior." (2) If materials prepared at their level and information is directly exchanged with the homemakers, a greater understanding is likely to occur. Program objectives need to be clearly identified prior to program implementation.

In conclusion, limited resource families do not generally plan, shop around, use or know which community services are available, and they often lack some degree of educational experience as well. Despite these facts, they aspire to "middle class" levels of consumption and middle class lifestyles. Therefore, programs that are to be directed toward this audience need to focus on their particular situation and influences. Programs need to be specifically developed for the environment and the controlling factors within it. Limited resource families can be taught to rise above their often used trial and error methods of management, but that help has to come in a form that is specific to their characteristics, needs and abilities.

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FINANCIAL MANAGEMENT PRACTICES OF REMARRIED FAMILIES

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Abstract

Remarried families constitute a growing but neglected segment of the American population. Previous research indicates that children and money are the most common problems. This pilot project examined the financial management problems and practices of remarried families. Further research can provide a basis for Cooperative Extension to offer workshops on preparation for remarriage.

After two decades of steady increase, the divorce rate fell in 1982 and again in 1983 (12). Yet, despite this slight drop, one out of three marriages is expected to end in divorce. While the high divorce rate and resultant problems have received extensive notice, very little public attention has been focused on remarriages which occur subsequent to divorce.

Remarriage after divorce is a common phenomenon. Although some remarriages include widowed persons, the majority of remarrieds were divorced. About three quarters of divorced persons remarry and most do so within three years of divorce (5). Of the widowed population, half of the men and one quarter of the women remarry (9). Almost half of divorcing persons are 25-34 years old. Thus, an increasing number are remarrying during their child bearing years (9). In 1982 there were 11.5 million divorced Americans with the potential for contributing to the growth of remarriages (12). Persons who divorce usually are disenchanted with their partner but not with the institution of marriage.

Although the rate of divorce in Canada has increased six fold since divorce laws were liberalized in 1968, the rate is approximately half the rate in the United States (18). The western areas of both countries lead the eastern regions in divorce rates.

Census Bureau estimates indicate that 10-12 million Americans live in remarried families; 6.4 million of them are children (12). Furstenberg (9) estimates that 15-20% of American children will live in a remarried family sometime in their lives.

The percentage of remarriages increased from 31% in 1970 to 44% of all marriages in 1980, with more than 80% of those remarriages involving divorced persons (12). Of those who remarry after divorce, 90% are under 45, with a median age of 30 (12).

The substantial increase in divorce and remarriage in the past two decades means that more and more families will face the problems of blending two previously separate units into one. While considerable research has focused on divorce and single parenthood, little is known about the dynamics of remarriage. Remarried families lack clearly established institutionalized guidelines to help them accomplish this blending of family units (5).

The remarried family has been identified as a high risk group due to the lack of established norms for dealing with complex relationships where roles and obligations are "poorly defined and poorly charted" (11, p. 194). This lack of institutionalized guidelines leads to stress as these families try to function in roles designed for the nuclear family.

Perhaps due to the strains and complexities of remarriage, the divorce rate is higher for subsequent marriages than for first marriages (5). The National Center for Health Statistics estimated that 30% of first marriages and 39% of remarriages begun in 1975 would end in divorce (12). The probability of divorce increases with each subsequent marriage (12). It is unclear whether the higher divorce rate is due to the stresses of remarriage or personal characteristics that may be related to a propensity to divorce.

The increase in the rate of remarriage accompanied by the lack of well established social norms means that more and more families will be struggling with the problems of life in a remarried family. As family sociologist Frank Furstenberg articulated the problem, "we know little about the problems that people encounter as they negotiate the passage from one marriage to the next or the evolving mechanisms which help individuals in managing this transition" (9, p. 2). This paper describes a pilot project to explore the financial problems and successful management strategies of remarried families.

Although a wide variety of terms have been used to identify these families: blended, reconstituted, and step family, among others, in this study the term "remarried family" was used to include any legal marriage in which at least one of the partners had been previously married.

Review of Literature

Most of the research based knowledge of remarriage comes from the family studies field with a focus on the complex interpersonal relationships which result from divorce and remarriage. Children and money are at the top of the list of common problems facing remarried couples (2, 5, 8).

In a study of 70 remarried couples, Messinger (11) identified children and money as the two most troublesome problems. Financial complications were most often related to ties with a previous marriage with child support and alimony payments causing problems for many of the families. Both men and women admitted failure to disclose financial assets to a spouse, with some purposely setting money aside in the event of another divorce. Messinger concluded that the financial area was a "poorly resolved and sensitive one for many, reflecting hesitation in making a commitment to a new marriage" (11, p. 197).

In a study of 16 white, middle class remarried families, Fishman and Hamel (8) found that the differences between expectation and reality, lack of literature to guide them, and lack of assistance and support from established institutions created stress. One of the most difficult problems related to the realization that "the nuclear family economic model does not easily fit, as

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income may come from multiple sources rather than from a primary source. Where monies come from, for whom and how funds should be spent are issues that must be dealt with" (8, p. 191).

In a subsequent study Fishman (7) identified two distinct strategies for handling family finances. Half of the families adopted a "common pot" approach, pooling financial resources and distributing them according to need, much the same as in first marriages. In the other families, each spouse contributed to household expenses but retained control over some money specifically to support his or her children. Fishman observed that this "two pot" system tends to perpetuate divided loyalties which may exist when two families merge, but offered autonomy and control to each spouse, while the "common pot" system encouraged unification of the two families. Families with less financial flexibility were more likely to pool resources, while more affluent families frequently allocated resources based on biological relationships.

Fishman recommended that families work out their competing needs for autonomy and commitment and base their financial strategies on an agreed upon plan. Marriage creates both a household and an economic unit. Economic behavior is a symbol of commitment which it is important for the couple to recognize.

In a study of four types of couples: married, living together, homosexual and lesbian, Blumstein and Schwartz (1) concluded that except among lesbians, money establishes the balance of power in relationships. When there is dissatisfaction about the amount of money available, all types of couples except lesbians find their entire relationship less satisfactory. And among all four categories, partners who feel they have equal control over expenditures have a more peaceful relationship. With respect to the issue of pooling finances, spouses who do not believe that marriage is forever are less willing to pool their finances.

The Fishman (7) model of "common pot" and "two pot" money management strategies illustrates how financial practices can unify or divide remarried families. Since the research was based on interviews with 16 middle class urban families, further study is needed to validate this model. Longitudinal research has the potential for discovering whether "common pot" marriages endure longer than "two pot" marriages or if couples switch from a "two pot" to a "common pot" method over the years. What do the children of "two pot" families learn about financial responsibility and commitment to family members?

The growing number of remarried families, the higher divorce rate for subsequent marriages, complex stepfamily relationships and the lack of institutionalized guidelines for remarriage suggests a need for research to study the financial management problems of remarried families. This information will be useful to educators and counselors who serve this population.

Problem and Objectives

The problem of this study was to identify successful models of financial management among remarried families and to identify common financial management problems. The specific objectives were:

1. to describe the financial management practices of remarried families,
2. to identify financial management problems of remarriage,
3. to compare financial management practices in remarriage to the previous marriage, and
4. to determine the degree of interest in attending workshops on topics related to remarriage and in establishing a support group for remarried families.

Methods

Due to the exploratory nature of the research and limited funding, data collection was carried out via telephone interviews. The need for open ended questions, screening questions, and the ability to probe for responses indicated the use of telephone interviews. The "total design method" developed by Dillman (6) was used to develop the interview instrument. A review of data collection methods by Tyebjee (16) concluded that data obtained by phone interviews was equivalent in validity and reliability to data obtained by other survey methods, direct observation or access to records. However, Tyebjee reported that it may be difficult to elicit income and personal finance information by telephone (16). Since participants in this study were volunteers or gave consent to be interviewed on this topic, this was not expected to be a problem.

The questionnaire used a combination of 140 closed-ended and open-ended questions to elicit information on family financial management attitudes and practices in the present and previous marriages. Many open-ended questions were included due to the exploratory nature of the research and to accommodate a wide variety of experiences. A 12 question segment on attitudes toward seeking financial help developed by Rimm (14) was included. Additional questions inquired as to their interest in attending workshops on remarriage and in a support group for remarried families.

The instrument included some questions used in previous studies (4, 10) with samples of married couples. Pretesting was conducted with three remarried couples. The instrument was revised and the length of the interview was established as approximately 45 minutes to one hour.

Since no list of remarried families in northern Utah was available, a variety of means were used to elicit volunteers for the non-random convenience sample. Flyers were posted around the community and notices appeared in local newspapers. Letters were sent to community service agencies and religious leaders. This publicity resulted in an interview on a local radio station to describe the purpose of the study. Some volunteers contacted the researcher while names of possible participants were collected from friends and colleagues. Each person who was contacted to participate was asked for further referrals, thus using the snowball

technique to increase the sample size. Twenty-five to 30 couples were desired for the pilot project.

Due to financial constraints the sample was limited to northern Utah. Telephone interviews were conducted by the researcher and a mature female research assistant. Referrals were contacted to explain the study and request participation. Interviews were conducted during the Spring and Summer of 1984.

To express appreciation for participsting, each couple was mailed a letter of thanks and a variety of money management brochures appropriate to their needs and stage in the family life cycle. A summary of the study was sent to interested participants.

Due to the non-random, convenience sample, statistical analysis was limited to descriptive statistics. Since this was a pilot project, the instrument contained many open-ended questions which provided direction for the study but were not suitable for quantitative analysis. Thus, much of the results section is expressed in qualitative rather and quantitative terms.

Results

Thirty-one couples originally agreed to participate. However, five husbands changed their minds and declined to be interviewed, one woman decided she did not want us to contact her husband, one mystery husband was never available and one couple decided to divorce before both could be interviewed. Thus, twenty-three remarried couples were interviewed by telephone regarding their financial management practices and problems and comparisons with their previous marriages.

None of the participants had been widowed; in 17 families both spouses had been divorced and 6 husbands were married for the first time. One husband was divorced twice. Length of previous marriage ranged from less than one year to 25 years. Current marriages ranged from less than one year to 15 years.

Those persons who were remarried the longest were least likely to be interested in joining a support group or attending workshops for remarried families. Women as a group were more interested than men. The women were also more willing to be interviewed and to discuss their situations in more detail than were the men. This may be related to the fact that both interviewers were women.

Most participants were 25-44 years with one couple 18-25, three individuals 45-54 and one couple 55-64. With some full time students and one retired couple, three families had incomes in 1983 of less than $10,000 but the majority of family incomes ranged from $10,000 to $40,000 with a few in the $40,000-$50,000 range. The sample was overwhelmingly LDS (Church of Jesus Christ of Latter-Day-Saints) and white. One hispanic Catholic constituted the minority representation. Thus the families were considered fairly representative of the northern Utah population.

Although many of the couples had debts from previous marriages and divorce proceedings, low incomes in relation to family size (0-7 children living at home), they expressed their willingness to make personal sacrifices in order to achieve their shared goals. When asked how their present marriage differed from their previous marriage, the majority indicated the maturity of both spouses and common values and goals. Compared to first marriages, they were much more likely to share the financial decision making and to have clearly articulated financial goals.

In response to open-ended questions on their present financial decision making process and advice they would give to others contemplating remarriage, they stressed joint decision making, open communication, planning behavior and the use of a budget and the need for trust and respect for each other. As one respondent said, "It's not the amount of money but agreement on how to spend it."

Financial stress contributed to the initial divorce for over half of the sample. Many reported arguing over money, having no system for managing their finances, lack of a financial cushion, inability to agree on expenditures and unrealistic expectations. Some participants mentioned their youth and lack of money management knowledge. Spending was used as a weapon to sabotage a spouse's plans by a few subjects.

None of the families in this study used a "two pot" system as described by Fishman (7) although some allocated child support payments for specific purposes such as buying clothes for the children. The lack of a "two pot" system may be due to the characteristics of the families from a non-urban area with no dual-career (as opposed to dual-earner) families. Similarly, none of the couples had a prenuptial agreement or marriage contract. Typically assets were owned jointly; most had joint checking and savings accounts although few had more than one or two month's income in savings.

Although the subjects were very willing to discuss their family and financial affairs with a stranger on the telephone, few reported discussing finances with their future spouse before remarriage. Even those who reported that financial problems contributed to their divorce were reluctant to talk about money with their future spouse. Of the few couples that discussed finances prior to remarriage, the discussion was usually limited to whether the wife would work. The sample overwhelmingly disapproved of women working when the children were very young. However, financial pressures made this essential for a number of the families.

As would be expected from national data, child support payments were often irregular and usually quite low. The average monthly child support payment in Utah is $40 which was typical in this sample if support was received at all. Many of the families reported problems in enforcing support payments, especially when the absent

parent lived in another state.

Discussion

Because of the substantial increase in remarriage over the two past decades more families will be struggling with the challenges for which society provided little support or guidance. Home management-family economics educators and researchers should become more concerned with understanding and serving the needs of the growing ranks of remarried families. Once remarried, the family resembles the nuclear two-parent family and thus have been neglected by professionals who serve families and society as a whole. We are well aware of special needs of divorced persons and single parent families. Remarriage may relieve some of their burdens but may also present a whole new set of challenges in merging two once separate units. Existing data indicates that remarried persons face a higher probability of divorce than first marriages (40-50% compared to 1 in 3 for first marriages).

Although family researchers have been active in exploring the family relationship challenges of remarried families, very little research has been reported on their financial problems. The members of our profession are uniquely suited to this task.

This study differed from the few previously reported studies of financial management practices in remarriage in using a community sample rather than clients who had sought help for problems. The families in this study may have been more representative of the population of remarried families than clients undergoing therapy.

The results of this study can be considered tentative due to the small, convenience sample from a limited geographic area. Only those families where both spouses were willing to participate were included. Interviews were completed with five women whose husbands subsequently refused to participate and thus were not included. Perhaps because both interviewers were female and/or because the men were working longer hours and had less leisure, the men were less willing than women to participate.

Despite acknowledging that financial problems contributed to their divorce, very few of these couples discussed finances before remarrying even though the merger would include two or three children on each side. Perhaps neither partner wanted to appear overly concerned with money. However, a number of the families admitted to experiencing financial strain after remarriage. Two couples expressed some degree of resentment about the financial constraints of their present marriage.

Since all the wives in this study were previously married and many receiving some child support, there were no instances of resentment over child support obligations. Literature (15) indicates that alimony or child support may foster resentment from a new spouse but none of the participants expressed such feelings. One man who was divorced after 25 years was very irate at having to pay alimony but was happy to support his dependent child.

Because many of the participants indicated that they had experienced strain relating to the challenges of blending two families into a united remarried family and expressed interest in attending programs geared to the needs of remarried families, the following recommendations are offered. Cooperative Extension leaders may want to develop educational materials and workshops for remarried families in their programs. Divorced persons have a wide variety of literature and often support groups to turn to for guidance and emotional support. Because the remarried families resemble the nuclear family their needs are less visible.

Home Management-Family Economics educators and researchers should work together to generate and use research based knowledge to offer workshops in preparation for remarriage to help prepare families for their new lifestyles. Establishing common goals and working out financial strategies and arrangements prior to remarriage may help ease the stress.

Family studies research indicates that a lack of institutionalized structure for remarriage complicates the process of blending two families into one. When children are involved, there is no honeymoon. This lack of period for working out joint goals and financial management strategies can cause stress. The complexity of family relationships and financial problems, along with the lack of institutionalized guidelines suggests a multidisciplinary approach to research and development of educational programs.

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TIME USED FOR HOUSEHOLD WORK: COMPARISONS FOR FARM, RURAL NONFARM, AND URBAN WOMEN

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Abstract

It has been proposed that the time allotments to household work and other work and nonwork activities are unique for farm women compared to rural nonfarm and urban women. This proposal was examined using the NE113 data base, a stratified random sample of 2100 two-parent, two-child families within the rural and urban areas of eleven states. Analysis of variance demonstrated no significant difference among farm, rural nonfarm, and urban women in time spent in categories of household work; there were significant differences in time spent in paid and unpaid work, organizational participation, and eating. Stepwise multiple regression identified hours in paid employment as the factor which contributed most to a decrease in all women's household work time.

As farm women continue to examine their role as part of the family farm enterprise, it is important to examine the household work patterns of women who live on farms. These patterns of household work include the total time spent on household work, the apportionment of time between various household work activities, and the times of day when household work is performed. Patterns of household work also vary according to the season of the year, the availability of other workers, and the standards that set the level for a job well done. These household work patterns exist in every household, but the special nature of the farm household may result in a household work pattern unique to it. What may most profoundly affect the household work patterns of the farm household is the interface of the farm household and the farm or ranch enterprise. Unlike most American households, where the place of work is geographically distant from the home, farm families experience their place of work and their household coincidentally.

History and Background

Some of the earliest studies of household production were efforts to measure time spent by farm homemakers in farm and household activities. The purpose of these studies was to reduce the strenuousness of the work done by women. The researchers hoped to discover not only which activities took the most time and energy, but what work simplification strategies or basic principles of leverage could be applied that would reduce steps or assist in the proper lifting of heavy loads (9).

Several of these early studies were funded by the Purnell Act, legislation passed in 1925 to support research in a number of areas, including home economics (2). The Bureau of Home Economics of the United States Department of Agriculture coordinated this across-state study of the use of time by homemakers. The most well known of the studies is Maud Wilson's 1929 analysis of the time of Oregon homemakers (12). Wilson reported on the results of time diaries kept by farm homemakers, "country" nonfarm homemakers, and "noncountry" nonfarm homemakers.

After the rash of studies in the late 1920s, the productive time of women in the home was not intensely studied again until the 1950s. Cornell University initiated a series of studies concerning how women use their household work time (11). These studies, and others, have emphasized rural/urban differences in time use, and the important effect of women's paid employment and family composition on household work time. However, recent studies have not concentrated on farm women as a group of interest. In their assessment of research needs of rural women, Joyce and Leadley called for a study of the time of farm women that could be compared to the 1927-1931 studies of farm women (5).

Time Spend in Household Work

Household work is usually defined as including the following activities: meal preparation, clothing construction, after-meal cleanup, care of family members, house care, house maintenance, shopping, clothing care, and management. One of the difficulties in comparing household work time across studies and/or decades, is that researchers do not always work from the same list of activities in defining household work. Yet despite the many differences in defining and collecting the data, the bulk of the research indicates that nonemployed women have, since the turn of the century, spent about fifty hours a week in household work.

In her 1929 study, Wilson found that farm women spent about 52 hours a week in household work (12). In a similar Bureau of Home Economics sponsored study, Arnquist and Roberts determined that farm women spent 53 hours per week in household work (1). In both studies, there was little difference in time spent in household work regardless of whether the women lived on a farm, in a rural area but not on a farm, or in the city. This absence of a significant difference due to residence appeared to hold true for all the Bureau of Home Economics studies (10). However, the total work week of farm women was greater because of the addition of farm related tasks; these tasks added about 10 hours onto the work week of farm women (10).

Objectives

The objective of this research was to learn about how farm women spend their time. Of particular interest was how farm women spend their household work time, and how such time was apportioned among the various household work activities. In order for household work to be viewed in context, it was also necessary to investigate how farm women spend

their time away from housework; their personal, leisure, and market-related work time.

Just as household work time needed to be seen in the context of all time-related activities, the time of farm women needed to be viewed in the context of the time spent by all women. An important objective of the research was to compare time spent in household work by farm women to the time spent by rural nonfarm women and urban women. Of importance was whether those differences were significant and whether the variation in time spent could be attributed to a single or group of variables.

Methodology

The data for this research came from the Northeast Regional Research Project NE 113. This research project was entitled An Interstate Comparison of Urban/Rural Families' Time Use. Eleven states participated in the project: California, Connecticut, Louisiana, New York, North Carolina, Oklahoma, Oregon, Texas, Utah, Virginia, and Wisconsin. These states represent all four regions of the U.S.: Northeast, South, North Central, and West. Each state agreed to use the same sample design. Consistency was important in order to be able to compare the results from one state to another (8). It was also necessary for pooling all the respondents from all the states into a single large sample, as was the case for the analysis in this study.

The sample was a stratified random sample of two-parent, two-child families within the rural and urban areas of the eleven states. The decision to limit the sample to two-parent two-child families was based on findings from earlier time studies. The results of the Cornell study indicated that family composition had a very strong effect on the use of time, especially the use of time in household work (11). Selecting only two-parent two-child families for the sample in the present study helped to hold family composition constant, so that other variables that affect time use could be examined more fully. The sample also was stratified by age of the youngest child; within the urban and rural samples of each state, 21 families were selected with a youngest child under the age of one, 21 families with a youngest child between the ages of 6 and 11, and 21 families with a youngest child between the ages of 12 and 17. The result for the entire data base is a sample of 2100 families (nine states with 210 families, Louisiana and North Carolina each with 105 families).

The sampling areas for the rural and urban families in the study were determined by the density of population. The urban sample in each state (n= 105) was drawn from a city of 100,000 or more and/or the places surrounding the city that had populations of 2500 or more. The rural sample in each state (n= 105) was drawn from towns of less than 2500, and farms and open country (including nonfarm residences) (3).

The farm population was identified by occupation. A family in the sample was classified as a farm family if either husband or wife declared their primary occupation to be farm laborer, farm foreman, farmer, or farm manager. In this study, a farm woman is a woman who declares herself to be in a farming occupation or is married to a man who declares a farming occupation.

The instrument for the study is made up of two parts; a time diary and a questionnaire booklet. The diary was designed to allow each family member's time use to be recorded in 5-minute segments for a 24-hour period. In each of the families in the sample, the homemaker kept the time diary for all the members of the family who were over the age of six. Time diaries were recorded for two twenty-four hour days. The first day was a "recall day," in which the homemaker was asked to recall how family members spent their time and to record this time use for "yesterday." The homemaker then kept a second time diary for the family activities that occurred "tomorrow," which was the day after the interviewer's visit. This second day is referred to in the analysis as the "record day." Thus there were two days recorded, separated by one day.

In order to generalize from the sample to the population, the sample data were weighted to reflect the true proportions of various types of families in the population. The weights used in this analysis were derived from population figures in the 1970 census. They take into account the population of each state -- urban and rural -- relative to the total eleven-state population for two-parent two-child families (3,173,947). Within the urban and rural samples for each state, there is a separate weight for each strata of age of the youngest child.

Results

The typical farm woman in the sample was about 33 years old, had several years of education beyond high school, and was a full-time homemaker. Farm women in this sample spent on the average 48.5 hours per week in household work. Rural nonfarm and urban women spent about 46 hours per week. This finding compares to Vanek's estimate that all of the Bureau of Home Economics data combined showed a mean of 52 hours of household work per week (10). Wilson reported 51.6 hours per week for farm homemakers, 54.8 for rural nonfarm, and 51.5 for urban (12). She concluded that farm homemakers perform about the same amount of household work as rural nonfarm or urban women, a finding which is replicated by this study.

Food preparation and dishwashing activity accounts for about 31 percent of the farm woman's household work time (Table 1). Rural nonfarm and urban women spend about 28 percent of their household work time in food preparation/dishwashing. Farm, rural nonfarm, and urban women all spend an average of 22 percent of their household work time in housecleaning and maintenance of the home, yard, car, and pet.

Farm women spend about 18 percent of their household time in the physical and nonphysical care of family members. This "child care" time is divided fairly evenly between the physical and nonphysical components of the activity. Both urban and rural nonfarm women spend about the same amount of time

in family care as do farm women. Farm women spend 13.7 percent of their household work time in care and construction of clothing. This mean of 6.7 hours per week is divided evenly between care of clothing (3.37 hours/week) and construction of clothing (3.28 hours/week). Rural nonfarm women spend a mean of 5.46 and urban women a mean of 5.08 hours per week in clothing care and construction.

TABLE 1. Percentage of household work time spent in different activities by farm, rural nonfarm, and urban women.[a]

	Farm n=55	Rural Nonfarm n=401	Urban Nonfarm n=1638
Food preparation/ Dishwashing	30.7	20.5	27.8
Housecleaning/ Maintenance	22.0	22.1	21.3
Care/Construction of Clothing	13.7	11.8	11.0
Physical/ Nonphysical Care	18.0	20.3	21.2
Shopping	11.4	13.0	14.1
Management	4.2	4.3	4.6
All Household Work	100.0	100.0	100.0

[a]weighted

Farm women spend a little under six hours per week shopping, while rural nonfarm and urban women spend 6.0 and 6.51 hours respectively. Management represents the smallest proportion of household work time, a little over four percent for all three groups. Management may be underrepresented because it is often carried on in conjunction with other activities (11). Women spent about 2 hours a week in this activity.

The oneway analysis of variance method outlined in the computer program Statistical Package for the Social Sciences (SPSS) (7, pp. 422-430) was used to test for significant differences between the groups (farm, rural nonfarm, urban) in time spent in household work. In all categories of household work the differences between the groups were not great enough to be significant. Thus this study provides no evidence to indicate that the household work patterns of farm women are unique compared to rural nonfarm or urban women.

Time Spent in Other Activities

Farm women spent a mean of 8.4 hours per week in paid work; this activity represents five percent of their total work week (Table 2). Rural nonfarm women spent 8.7 percent of their week in paid work and urban women spent 6.8 percent. These figures are an average of all women in the subsamples, including many who do not work for pay. The differences between the three groups are significant at the .01 level.

Unpaid work is "work or service done either as a volunteer or as an unpaid worker for relatives, friends, family business or farm, social, civic, or community organizations" (3, p.86). Farm women spent a mean of 5.38 hours per week in unpaid work on the family farm. This figure is higher (p= .0592) than the time spent by urban or rural nonfarm women in unpaid work. In addition to paid work and unpaid work, school work was engaged in by a few women; school work accounted for less than an hour a day during the week.

Farm women spent 5.43 hours per week in organizational participation, compared to 3.23 for rural nonfarm and 2.37 for urban (p= .001). Social and recreational activity took up a large proportion of every woman's week; almost 18 percent of the week's time for urban women, 17 percent for rural nonfarm, and about 16 percent for farm. Differences in time spent in social and recreational activity were not significant.

TABLE 2. Percentage of weekly time spent in all activities by farm, rural, and urban women.[a]

Category	Farm n=55	Rural Nonfarm n=401	Urban Nonfarm n=1638
School work	.4	.4	.4
Paid work	5.0	8.7	6.8
Unpaid work	3.2	1.8	1.8
Organizational participation	3.2	1.9	1.4
Social and recreational activity	16.3	17.1	17.9
Personal care of self	38.1	37.8	38.4
Eating	4.7	4.6	5.1
Other	.2	.2	.6
All household work	28.9	27.5	27.6
TOTAL	100.0	100.0	100.0

[a]weighted

Because personal care of self includes sleep, it takes the greatest proportion of every woman's day, surpassing even household work in the number of hours devoted to it. More than one-third of women's weekly hours were spent in personal care. Differences between farm, rural nonfarm, and urban women were very slight. Time spent eating varied across the three groups (p= .001). Farm women spent about eight hours a week eating (which represented about 5 percent of total weekly time), while rural nonfarm women spent less time eating and urban women more.

Regression Analysis

Three regression equations were constructed to investigate forces that might contribute to explaining variation in household work time. The three dependent variables were: 1) time spent in household work by farm women; 2) time spent in household work by rural nonfarm women; and time spent in household work by urban women.

For each of these dependent variables the same groups of independent variables were tested for their contribution to explained variation. The six independent variables were: 1) educational level of the woman; 2) paid work time of the woman; 3) unpaid work time of the woman; 4) family income; 5) age; and 6) age of the youngest child. The stepwise multiple regression procedure contained in SPSS was used for this analysis.

The results of the regression analysis for the dependent variable "time spent in household work by farm women" are detailed in Table 3. The final regression equation included those variables that added at least one half of one percent to explained variation, and variables that did not meet this criterion but were of interest on a conceptual basis.

TABLE 3. Multiple stepwise regression of selected variables on hours spent in household work by farm women (n=50).[a]

Independent variables	Est. Beta	Std. E	F	sig	R^{2b}
Hours in paid work	-.49	.12	15.60	.000	.240
Hours in unpaid work	-.47	.29	2.66	.110	.306
Income	-.13	.11	1.52	.225	.347
Age of the youngest child	-.66	.31	4.48	.040	.369
Age of woman	.09	.05	3.30	.076	.414
Education	.03	.15	.03	.864	.414

[a]weighted

[b]adjusted R^2 = .33276

Total explained variance by the group of independent variables is .41. The adjusted R^2 is .33 (adjusted for the small number of observations). The six independent variables explained 33 percent of the total household work time. The women's hours spent in paid employment accounted for most of the explained variation. This finding is consistent with other studies of household work of urban women (4,6,11); it appears to be applicable for farm women as well. The Beta value shows that for every hour the woman spent in paid employment, she spent about half an hour less in household work.

Hours in unpaid work in the family farm or business adds another 7 percent to explained variance. However, the Beta value for unpaid work is not significant; it cannot be estimated from this analysis how farm women might adjust their household work time in response to time spent in unpaid work.

The income variable contributed 4 percent to explained variance; the Beta for this variable is also not significant. Age of the youngest child contributed only 2 percent to explained variance, but the Beta of -.66 was significant at the .04 level. As the age of the youngest child increases, farm women spend less time in household work.

This finding is consistent with the Cornell study (11) which found age of the youngest child to be a predictive variable of hours spent in household work.

In the equation for rural nonfarm women, fewer variables contribute as much as one half of one percent to explained variance, but more of the variables have significant Betas (Table 4). For the dependent variable "hours in household work by rural nonfarm women," only hours in paid employment, hours in unpaid work, and age of the youngest child contribute at least one-half of one percent to explained variance. For urban women (Table 5), the same three variables plus age of the woman and income contribute to explained variance of hours spent in household work.

TABLE 4. Multiple stepwise regression of selected variables on hours spent in household work by rural nonfarm women (n=389).[a]

Independent variables	Est. Beta	Std. E	F	sig	R^{2b}
Hours in paid work	-.52	.04	169.53	.000	.316
Hours in unpaid work	-.42	.11	14.66	.000	.347
Age of youngest child	-.27	.10	7.78	.006	.364
Income	-.12	.07	3.07	.081	.368
Education	.03	.07	.26	.607	.369

[a]weighted

[b]adjusted R^2 = .36062

TABLE 5. Multiple stepwise regression of selected variables on hours spent in household work by urban nonfarm women (n=1534).[a]

Independent variables	Est. Beta	Std. E	F	sig	R^{2b}
Hours in paid work	-.49	.02	585.60	.000	.275
Age of the youngest child	-.60	.05	124.76	.000	.343
Hours in unpaid work	-.36	.06	41.63	.000	.357
Age of woman	.05	.01	24.55	.000	.366
Income	-.12	.34	13.46	.000	.372
Education	.01	.03	.13	.718	.372

[a]weighted

[b]adjusted R^2 = .36920

Total explained variance for the rural nonfarm sample is .37. The adjusted R^2 is .36. For the urban sample explained variance is .37. The adjusted R^2 is also .37. The six independent variables explained about 37 percent of the variance in both the rural nonfarm and urban women's total

household work time. As with farm women, hours in paid work accounted for most of the explanation of the variance. For unpaid work, Betas indicate that for every hour rural nonfarm and urban women spend in unpaid work in a family business, they reduce their household work time by about 20 minutes. For both groups, age of the youngest child influences household work time to fall as age of the child increases. As urban women get older, they increase their household work time slightly.

Implications

Household work appears to be a demanding set of tasks, a package of goods and services that requires about the same amount of time regardless of residence. Although it may seem, both to farm women and the researchers that observe them, that the farm household work load is a heavy one, it may actually be the nature of the combination of household work and farm work that is unique. This research demonstrates that farm women do spend more time in the family farm or business than do rural nonfarm or urban women. Furthermore, regression analysis indicates that while urban and rural women reduce their household work by 20 minutes for each hour that they spend in unpaid work, the household work time of farm women is not directly influenced by their unpaid work on the family farm. However, farm women do reduce their household work time in response to paid work. It therefore appears that, for farm women, choosing to spend time in paid work is balanced by reductions in the household work load, but choosing to spend time in unpaid farm work may be an addition to the total work load.

It is not clear why farm women are willing to reduce their household work time in response to paid work, but not in response to unpaid work. What is not shown by this analysis, but would be useful to understand, is whether farm work hours respond to paid employment hours. If unpaid farm work is engaged in irrespective of household work and/or paid work, it may be due to the pressing need for labor contributions on the farms and ranches where the women engage in farm work. The cost/price squeeze of some farming enterprises may demand the labor inputs of family members, in addition to the members' involvement in other productive activities.

Future research is needed to investigate how the financial status of the farm/ranch enterprise affects the woman's level of participation in farm work. Rural labor outmigration, declining birth rates, and the supply of paid employment also need to be examined for their affect on the unpaid farm work hours of farm women. Because unpaid work may have been underrepresented in this sample because of the low number of interviews for the farm sample during harvest season (May-August), future research should carefully measure the season variable.

The importance of unpaid and paid work in the household work regression equations emphasizes the interdependence of the household and market sphere. Although one's farm or nonfarm residence does not seem to affect time spent in household work, labor force participation is related to a reduction of household work time. How such reduction occurs has been partly explained in other research; reductions appear to be evenly spaced through out the categories of household work. It is not clear, and a subject for further investigation, whether household production is reduced by substituting market equivalents (eating out, professional laundry, etc.), or by changing the goals and/or standards of family members or some of both. Since farm families are geographically separated from some of the market substitutions for production, their reductions in household work time may be more likely to be changes in family standards and goals. When the farm woman chooses to spend her morning working in town as a bookkeeper, the farm family may have chosen an unbaked apple pie, an unpatched pair of blue jeans, or a story not read to the three year old. These trade-offs are critical to farm family decision-making in terms of placing adult family member efforts in the household versus off-farm production versus farm work spheres.

The results of this research have implications for organizations and governmental agencies that plan programs for farm audiences. It is critical for such groups to recognize the wide variation in level of participation in farm enterprises by farm women. Many women in this sample reported no time spent in unpaid family farm work. Yet others reported contributions of 40 hours or more per week. It is important that agencies do not operate under stereotypic notions of farm women, but recognize that some farm women are heavily involved in the enterprise, while others are less so. At the same time, families who recognize the potential value of the woman's contribution to the farm enterprise may respond to efforts to provide public policy education and farm and financial management information geared especially for women. The value to the enterprise and to the family could be greater than the benefits of off-farm employment.

The similarity of farm, rural nonfarm, and urban women's household work roles suggests that professionals may use existing urban data as the basis for calculating the dollar value of farm women's household work. This information is suitable for use in liability suits involving the loss of farm women's household services. Further research is needed before recommendations can be made regarding the value of the unpaid farm work of farm women.

Further research is needed into farm women's productive activities. Such research could provide an important data base for understanding family/work interactions. Such interactions may be unique in family-owned enterprises such as the family farm.

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AN INVESTIGATION OF ECONOMIC AND OTHER FACTORS INFLUENCING RURAL FAMILIES ENERGY USE DECISIONS

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Abstract

Qualitative methods and an ecosystem focus were used to explore in depth the energy consumption attitudes, knowledge, and practices of ten rural families with teenagers from August 1981 through February 1982. Although families were concerned about energy resource prices, they were unwilling to give up comfort in their microenvironment. When making energy related decisions, families considered short-term costs not long-term cost-benefits.

Introduction

Families' decisions concerning expenditures on energy resources have become a concern to families and to educators in the last 11 years, due to large increases in prices and to a concern for dwindling energy resource supplies. Utility companies which once encouraged families to consume energy products now encourage conservation.

Research on household patterns of energy consumption and energy conservation has focused on the attitudes and the values of families in relation to the energy crisis, to the promotion of energy conservation, and to energy conservation policies. The "self-reporting" of energy consumption and energy conservation practices have been studied; however, actual energy consumption data has been collected less frequently. Energy survey research has tested hypotheses by selecting relatively large samples of the population. But, few studies have used qualitative, interpretive science approaches to gather in-depth respondent information.

Many studies have focused on the household energy consumption of urban families (2, 6, 7, 9, 18); few studies have examined urban families' automotive energy consumption (19, 23). Fewer studies have investigated rural families' energy use (11, 16, 20, 24).

Few researchers have utilized the case-study approach to investigate a small number of families in depth (1, 8). The small number of studies completed on rural families' energy consumption have been survey studies (16, 29). In-depth information on the energy usage of rural families has not been collected. Little is known about the decision making process that rural families utilize to allocate their energy resources. The case study method as applied to the investigation of rural families' energy consumption is useful in discovering new variables and new relationships which are not easily found with quantitative, large sample survey research (12). The purpose of this study was to investigate the relationships between household energy consumption and conservation practices in three family microenvironments, transportation, housing, and clothing and to explore energy consumption attitudes, knowledge, and practices.

Conceptual Framework

An ecosystems framework provided direction to the research process. The family as an ecosystem and the clothing, the housing, and the transportation microenvironments were the foci of the study.

It is a basic premise of the ecosystem approach that systems interact among themselves, within environments, and between environments. The family is a system that acts with purposeful behavior (4, 15, 21). An ecosystem framework provides a theoretical integration of the factors contributing to energy consumption, due to its flexible and its holistic approach (17).

The family's environment can be defined as all factors outside of the family which in some way affect the family and upon which the family has some effect. Three levels of the environment, micro, meso[2], and macroenvironment, were identified. Influences on individual systems or on family systems occur at each level (see Figure 1). The levels vary in the amount of interaction which occurs with the family systems. None of the levels are distinct; their borders may shift. The border between the micro and mesoenvironments shifts more frequently than the border between the meso and macroenvironments. The macroenvironment is all encompassing; it includes both the natural environment and the societal institutions (3, 5, 17, 22).

Change can occur at all levels of the environment. Families adapt in response to change. Adaptation is a coping mechanism that enables family systems to adjust their lives to their environments. When heating fuel increases in price, for example, families make changes to adapt to this new situation. Families are best able to change their microenvironment, and they are least able to change their macroenvironment; although, all family behavior has some consequence on the environment (22).

The components of the interaction of the family system and their environment include: the input, the throughput, the output, and the feedback of the personal, the managerial, and the individual family member subsystems (5, 17) (see Figure 2).

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[2] Meso means middle. Bronfenbrenner (3) uses the term mesosystem as one of four levels of analysis used when defining the environment.

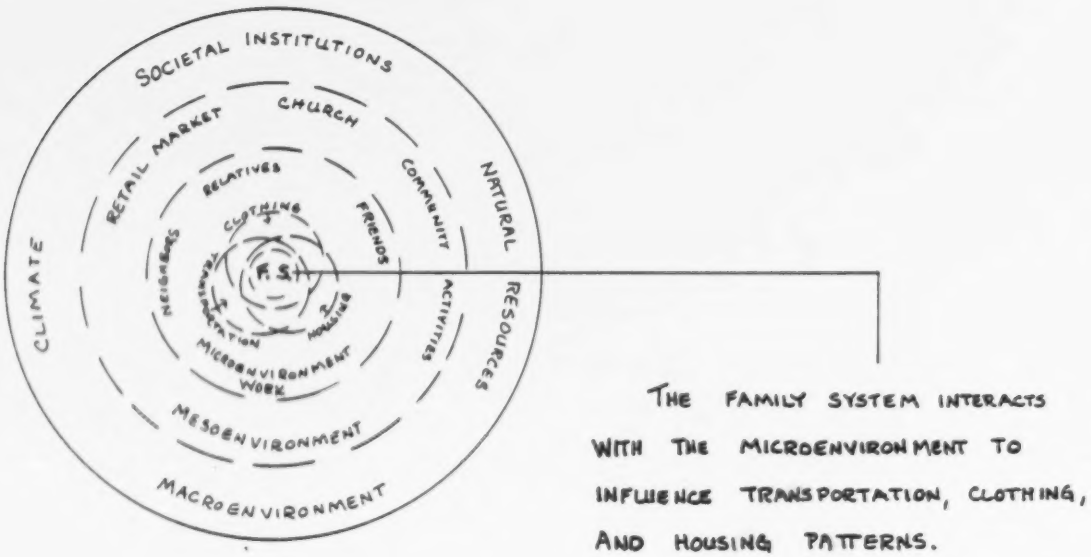

FIGURE 1. Model of Family Systems Environment

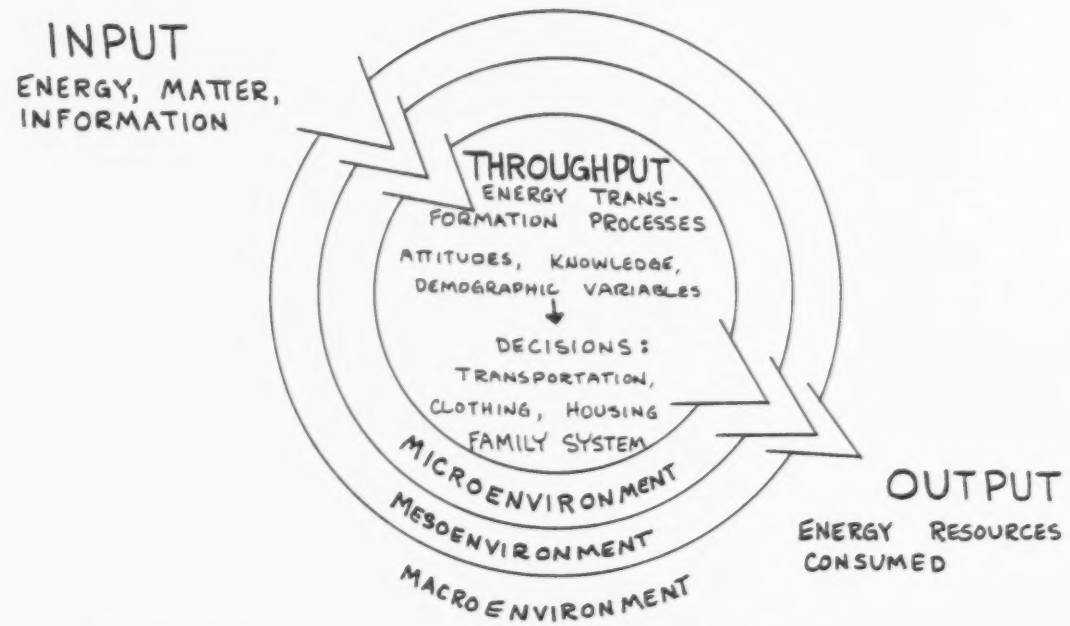

FIGURE 2. Structure of the Conceptual Model

It is these elements that ultimately affect the micro, the meso, and the macroenvironments.

The input investigated were ecological attitudes and attitudes and energy conservation knowledge related to automobiles, to clothing, and to housing, as well as selected demographic variables. The throughput studied were decisions on appliance and fireplace usage, on thermostatic settings, and on travel. The output which were analyzed were the clothing worn, for thermal comfort or other purposes; the completed household energy conservation tasks; the usage of solar heating and woodburning systems; the actual energy resource consumption; and the average annual miles driven.

Procedure

Rural families with teenagers were identified as the research population. This decision was based on a study which identified families with teenagers as having special energy needs (8).

In selecting the sample, community informants identified farm and town families with teenagers. Judgment sampling was used to select ten families (10, 14). In order to be selected for the study, both parents and at least one teenage child had to be willing to participate.

The sample consisted of four farm families and six town families. Three of the farm families had homes built prior to 1945, and one farm family had a home built in 1977. None of the town families had a home built prior to 1955. All of the families in the study had incomes between $8,000 and $45,000, were dual-parent, and were Caucasian. The parents' ages ranged from 35 to 65, and their children's ages ranged from 5 to 19. The parent's level of education ranged from ninth grade to graduate coursework. In all the town families, both parents were employed outside the home. In one farm family, the wife worked outside the home and the farm; the other three farm wives worked at home.

The data were collected during a seven-month longitudinal; field study, between August 1981 and February 1982. Several research techniques were used to help to insure the validity and the reliability of the data (13): structured interviews, unstructured interviews, family kept diaries, and researcher observation. During one summer week and one winter week, all the families kept their own records on fireplace and vehicular usage, on clothing usage, and on thermostatic settings. The data on the following items were collected through interviews: completed household energy conservation tasks; attitudes related to automobiles, clothing, and housing, as well as ecological attitudes; decisions concerning reduction of home heating bills, use of woodburning and solar systems, and transportation dilemmas. With permission of the families, natural gas, fuel oil, and electricity utility company data were also collected.

Initial data analysis consisted of single concept and unit analysis of the transportation, the clothing, and the housing data which enabled the discovery of patterns in attitudes, in knowledge, or in practices unique to each microenvironment. Microenvironment data collected on the individual family units were analyzed to discover overriding patterns of behavior and interrelationships between the three microenvironments. Due to the qualitative nature of the study, results are not generalizable and should be considered as directions for future research and hypotheses generation.

Results

Energy resource costs were of concern to the families, but comfort was the overriding factor in influencing energy behavior. Seven out of ten families chose room temperatures of 70.5°F or higher. All but one teenager preferred temperatures of 70.5°F or higher. Families neither budgeted specific dollar limits or energy resource quantity limits. Although the cost of the energy resources was important to the families and they were discouraged by increasing energy resource prices, when asked to choose (in structured interviews) between saving money, saving energy, or being comfortable, they chose comfort. This finding was also noted by the researcher's observations of the families.

All ten families had completed some energy conservation tasks. The analysis of data collected from unstructured interviews on decision making and the researcher's observations showed that the families made their energy-related decisions based on their immediate needs and perceived costs, but not on the total cost. When questioned concerning decisions on retrofitting the home, or purchasing perceived energy saving devices, the items the families reported were generally "low cost" items like caulking and weatherstripping. Thus, they sought maximization of short-term costs without looking at the cost-benefits of long-term options. For example, one family chose to install a ceiling fan to solve their draft problems instead of investigating the problem in depth, evaluating furnace registrar and thermostat location, and adding additional insulation. When families did invest in more costly items like remodeling to install an "efficient" fireplace (one which circulates heated air to the room and draws outside air to provide oxygen for combustion), the long-term questions, like the adequacy of wood supply, were not considered. No family had completed all possible home energy conservation tasks.

Five families, half the sample, chose to become less dependent on fuel oil and natural gas to help defer space heating costs. Four families had woodburning fireplaces installed in the family or living rooms and used wood as a primary heating fuel. Two families, one with a fireplace, had solar panels installed which would heat the air and blow it into the house's interior.

The woodburining families decided to trade off energy resource dollars for human energy and time. All four families chopped, gathered, and transported their own wood from their own or from friends' lots. The wood was perceived as free; the land cost was not recognized. None of the families had renewable supplies of wood. All

family members in two families contributed time and energy to wood collection, wood burning, or cleaning of the fireplace, although not equally. Usually the husband or the wife assumed the majority of the workload. In the other two families, one spouse did all the tasks. In all families, the fireplace required wood at night, so one family member had to be responsible for staying up late or getting up to add wood. All four families had owned their fireplaces for three years or less. At the time of the interviews, the human energy and time cost of wood burning was not viewed as a problem by any of the family members who participated in the work. The families who did not have woodburning systems did not choose these systems because they did not wish to spend the extra human energy and time; although, they perceived woodburning systems as a means of saving on fuel dollars.

In both homes with solar systems, there had been less than optimal decision making when buying the solar systems. One of the families spent very little time investigating alternative solar systems. A salesperson introduced the system to the husband who knew he would gain a tax benefit so he decided to spend the money. He assumed that he would be repaid by the tax benefits and the savings in fuel oil; although, he did not attempt to calculate the potential benefits. In the other family, the husband had looked at several systems, but when he purchased his panels, he did not investigate them in depth. His purchase decision was made very quickly.

Families disliked the size of their gasoline expenditures, but they did not perceive ways to reduce costs. For example, the shopping decisions made by families were rarely viewed as having costs beyond the product cost. Families would choose a shopping site based on the cost of the goods or based on the selection of goods; however, they did not consider the distances driven. Teenagers, particularly the daughters, were concerned with being able to purchase fashionable garments, and usually drove 30 or more miles to shop. Their parents did not interfere with their choices unless the cost of the garment was too high. Children were not restricted to shopping in the nearest towns to save gasoline or in other uses of family vehicles.

Policy decisions on school bus availability increased gasoline consumption for families. Because of economic constraints, bus funds in the county were decreased which resulted in reduced bus service. No bus was available for after school activities. The trade off was less money spent for bus fuel, maintenance, and drivers' salaries and more gasoline consumption by individual families. This was an increase in direct transportation costs to families. Some families, in addition to increasing gasoline consumption, purchased additional vehicles.

All ten families had made some behavioral and structural changes to conserve energy. None of the families perceived the problem to be grave enough to require additional expenditures for structural changes or major behavior changes.

Conclusion

The findings of this study should be regarded as working hypotheses. Large sample research is needed to test the findings. However, the results of this study demonstrate the importance of using several research practices.

The importance of comfort over economic savings was discovered through the family diaries and the researcher's observations. In fact, families' self-reported data collected in the initial interview contradicted actual observed and diary reported data. When interviewed in the fall eight of the ten families reported lower winter indoor temperatures then the investigator measured during two winter visits. This illustrates the importance of using a variety of data collection methods and raises questions about the validity of self-reported data. Data collection methods for energy consumption studies need to be investigated.

Qualitative methods coupled with an ecosystem approach were used for this study. This allowed families' energy behavior to be investigated in depth which is not usually possible with large samples. The importance of comfort and families' decisions based on immediate costs as opposed to total costs would not have been discovered in a large sample survey. The use of the diaries provided additional in-depth material. To acquire more knowledge on factors influencing families' economic behavior, researchers should utilize qualitative methods. This may necessitate the use of more trained interviewers than when large samples are involved with a quantitative study. The additional data discovered, however, would justify the expense and time involved.

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USING MICROCOMPUTERS IN FAMILY ECONOMICS AND HOME MANAGEMENT

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Abstract

Uses of microcomputers in family economics and home management are discussed. Emphasis is on capabilities of the microcomputer as it relates to both the discipline as a whole and to educational aspects of its mission. Computer terminology and philosophical questions for consideration by professionals in the field are also included.

Importance of Microcomputers

Family resource management educators are now facing the challenge of deciding where microcomputers best fit into their lives. Although home economists have been working with computers for several years, widespread adoption has not yet occurred. The microcomputer, with its vast potential, offers new challenges in the family resource management area.

In June, 1981, a program entitled "Capitalizing on Computers" was presented at the AHEA Meeting in Atlantic City, New Jersey. The purpose of the program session was to increase the awareness of innovative applications of computer technology for educating and communicating in home economics.(4) An article in the Journal of Home Economics (3) described aspects of personal computer ownership with implications for home economists. Another article in the Journal of Home Economics (2) described computer-based instructional materials which can be used for educational purposes. Various state publications have also carried introductory articles relating to the microcomputer. The integration of microcomputers into more and more of the equipment used daily in homes and at work is increasing. Computer classes are offered in the business world, and many computer stores are now offering evening classes to their customers. All of this indicates that the microcomputer age is upon us whether or not we choose to integrate microcomputers into our daily lives, and the family resource management area with its emphasis on decision-making, planning, and use of resources is particularly appropriate for this new medium of communication.

Computer Literacy

A knowledge of computer terminology enables the family resource management educator to interact with the whole computer world, and computer literacy allows the family resource management educator to take an active part in decision-making related to the purchase of computers. (See the Appendix for a partial list of computer terminology.) Only in rare cases would one encounter a dealer who is willing or able to explain in detail to the uninformed the capabilities and characteristics of computers. The purchase of a computer through an educational institution would also require a familiarity with hardware terms so that the equipment could be put out on bid. If the educator is looking for certain capabilities of the computer, then knowledge of terminology and specific function are necessary in order to acquire the appropriate equipment. When educators are willing to study computers, they gain computer literacy and are able to present a strong case for the acquisition of computers to assist in their work.

Computers are expensive, and administrators might not acquire them unless there is a commitment to their use. Computer literacy plus the ability to use computers, can convince administrators that such equipment purchases are indeed important for use by educators.

Microcomputer Use in Family Economics and Home Management

Microcomputer disks have such a vast storage capacity that household records such as inventories, budgets, credit transactions, mortgage payments and schedules, and tax records can be conveniently and compactly stored on them. Database management activities such as retrieving mailing lists, names and addresses, and stamp collections can be done quickly on the microcomputer. In addition, word processing including writing letters, papers, and books, and spread-sheets for record keeping add convenience and speed for the user. Simulation games which teach students values through decision-making are effective because students can practice

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decision-making without having to take direct responsibility for them. Educators can also utilize the microcomputer in the classroom for managerial tasks such as recording grades, averaging grades, keeping attendance records, and retrieving information from centralized data bases. It is predicted that parents and children as a unit, making decisions together, will work at terminals earning income, as well as pursuing hobbies and absorbing information.

Computer assisted instruction in the personal finance class at the University of Wyoming revealed the fact that students preferred a one-on-one teaching technique over group instruction. The loss of one or two commands in the group instruction technique left them behind in executing a program. This was especially true in teaching the spread-sheet for budgeting. Other programs used in the class were stock market simulation, loan amortization, bank reconciliation, consumer helps, insurance computer program, and budget simulation. Plans are underway to design a computer program on decision-making and then to contrast teaching those concepts on the computer with the more standard teacher, book, lecture, discussion, examination method. Computer assisted instruction may emerge as an effective way to teach these concepts. Since family resource management educators will be involved with both commercial software and that which they design themselves, they will need to acquire an ability to evaluate both types. The highly interactive approach is desirable in educational efforts, and this can be assessed as a user inputs his information, waits for processing by the computer, and then receives a response from the computer. The reading of text from a video screen is no different from reading printed matter from a book except that it is harder on the eyes.

Questions to be Confronted

Questions of the computer world facing family resource management educators are: (1) Will our profession make a commitment and become involved soon? (2) Will this commitment to computers involve proper attention to the curriculum in pre-professional education? (3) What provisions will be made for inservice training of educators already serving in the profession? (4) Since computer science departments tend to focus on mainframe computers, who will give the training on microcomputers? (5) Who will provide the leadership? and (6) What are the rewards, both intrinsic and extrinsic, for educators who make the effort to integrate computers into their work?

As family resource management educators look toward the future, their direct involvement is imperative for a profession entering the electronic age. Not to become involved is a mistake. The commitment to learn something about computers, to make use of them in professional work and in life, and to share that knowledge with others is essential. Those who stand on the sidelines and ignore the electronic age, including computers, will become obsolete in their approach to their careers. The electronic age is challenging family resource management educators to decide how, when, where, and why the computer (especially the microcomputer) fits into their professional lives.

Appendix
Computer Terminology (1)

Large scale computer--Sometimes also called mainframe. Does extensive and high speed data analysis. Is also capable of extensive and high speed information retrieval. It supports multi-user requirements. (IBM, 360, 370, Cyber)

Minicomputer--Is faster than the microcomputer and has more storage capability in relation to data analysis and information retrieval. (Hp 2000 series)

Microcomputer--Small and relatively slow in relation to data analysis and information retrieval. Used for drill, problem solving, programming, simulation, tutorial exercises, and testing. (Pet, Micro TRS-80, Apple II)

Basic--A language used by humans to tell computers what they are supposed to do. The word, "Basic" is an acronym for "Beginners All-purpose Symbolic Instruction Code". It can be used with almost all personal computers and is extremely popular.

Bit--Smallest amount of information that can be known. Refers to "Binary Digit" meaning either a one or a zero. Represents a two-way choice like yes/no, true/false, or on/off.

Bug--An error. A hardware bug is a malfunction or design error in the computer or its peripherals. A software bug is a programming error.

Byte--Technically eight bits (very rarely some other number of bits). In practice, a byte is usually used to represent an alpha-numeric character or a number in the range 0-255.

CAI--Computer Assisted Instruction. The idea of using the computer to assist the instructor in the teaching effort. Any application in which computers serve as the delivery system for the instructional program.

Command--A request to the computer that is executed as soon as it has been received.

CRT--Abbreviation for "Cathode Ray Tube" but in practice it is computerese for a television set or any television-screen type of display.

Debugging--Finding errors and correcting them.

Disk (Disc)--A circular piece of material which has a magnetic coating similar to that found on ordinary recording tape. Used for storing data and programs.

Diskette--A small floppy disk in a square plastic envelope commonly 8 inches or 5¼ inches in diameter.

Disk Drive--A peripheral which can write information on and read information from a disk. A floppy disk drive can write information from a floppy disk and can read that information.

Hard Copy--Information printed on paper or other durable surface. This term is used to distinguish printed information from the temporary image presented on the computer's CRT screen.

Hardware--The physical parts of a computer.

Input--Information arriving at a device. The word "input" is sometimes used as a verb. For example, you must input the data before doing the calculations.

Interface--The electronics that allow two different devices to communicate with one another. More generally, any situation where two different entities (e.g. a person and a computer) communicate.

I/O--Abbreviation for Input and/or Output. A keyboard, a floppy disk drive and a printer are all I/O devices.

K--Stands for "Kilo" which means one thousand. In computerese IK is usually used to mean 1024 but sometimes stands for 1000. The higher the K, the more bytes of memory that are available.

Memory--The portion of a computer which stores information. See ROM and Ram.

Modem--An abbreviation of the words "MOdulator-DEModulator". It is a device that allows a computer to communicate (or interface with) over the telephone lines.

Output--Information leaving from a device or process. For example, the output from a computer can be displayed by a printer or CRT.

Peripheral--Interface? A device that can send information to and/or receive information from a computer. Some typical peripherals are floppy disk drives, printers, modems, and television sets.

Personal Computer--A general purpose computer that is inexpensive enough to be owned by an individual with a moderate income. Could be mini or micro, hand-held or programmable calculator.

Printer--A peripheral that makes hard copy of letters and numerals. A line printer prints a whole line of text at a time.

Program--A sequence of instructions that describe a process to a computer. A program must be in a language that a computer can understand.

Programmer--A person who writes and documents programs.

RAM--Acronym for "Random Access Memory." This is the main memory of any computer. Information and programs are stored in RAM, and they may be retrieved or changed by a program. For some computers, the information in RAM is lost whenever the power is turned off.

ROM--Acronym for "Read Only Memory." This is a kind of memory in which the information is stored once, usually by the manufacturer and cannot be changed. Programs such as a BASIC interpreter that are used by nearly all owners of a computer are often stored in ROM.

Screen--A surface on which information is displayed, such as TV screen. Sometimes called CRT.

Software--Programs. "Software" refers to programs and data.

Terminal--A peripheral consisting of a keyboard through which a person can send information to the computer and a printer or screen through which the computer can present information to the person.

Text--In computerese, this word means data other than numbers.

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THE EFFECT OF STRUCTURAL MODIFICATION ON ENERGY CONSERVATION BEHAVIORS

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Abstract

The purpose of this study was to investigate the relationship between energy conservation behavior prior to and following the addition of energy saving structural features. The sample, taken from the longitudinal Oregon data from the Western Region Agricultural Experiment Station Project (W-159) was composed of 170 homeowners who had made structural modifications after March, 1981 and prior to March, 1983. The statistical analyses used in this study involved two stages: (1) descriptive statistics in the form of frequency distributions and (2) t-tests. Behavior was found to have changed significantly ($p<.05$) with the addition of two structural modifications. In addition, behavior patterns were documented and discussed.

"If weatherization is defined as a permanent change in a structure to make it more energy efficient, and conservation is defined as actions which result in less energy use, then the study suggests the following, the more people weatherize, the less they conserve" (General Marketing Research Association, 1980:6).

Home weatherization through structural modification is an important energy conservation measure. However, once the structural modifications have been completed, is behavior changed in relation to conservation actions performed prior to weatherizing? Are consumers trading the savings of structural modifications for increased comfort or convenience in their homes?

Purpose

The focus of the current study is on the relationship between energy related behaviors prior to and following structural modifications of the residence. If there is a change in energy conserving structural modifications, will there also be a concomitant change in energy conserving behavioral practices? The objectives of this study are: 1) to create a profile of the sample consisting of those who added one or more structural modifications between March, 1981 and March, 1983 and 2) to determine behavior changes for those respondents who had added energy conserving structural features between March, 1981 and March, 1983.

Theoretical Models

Verhallen and van Raaij (1981). Verhallen and van Raaij (1981) focused on the lifestyle of the household members as a major determinant of household energy use and were able to explain 61 percent of the energy use-variance. Household behavior explained 26 percent, home characteristics 24 percent, and special circumstances explained 11 percent of energy-use variance. Attitudes were poor predictors of household behavior in this study, and although most respondents had positive attitudes towards energy conservation, they did not behave accordingly.

Pacific Power and Light (1980). Pacific Power and Light (1980) (PP&L) in cooperation with General Marketing Association (GMA) Research Corporation attempted to determine if behavioral patterns of customers after weatherizing changed in relation to other conservation actions performed prior to weatherizing. Although existing data is not sufficient to support the hypothesis that behavior changed as a response to weatherization, this change was indicated. Researchers indicated consumers modified their lifestyles in a negative sense following the addition of residential weatherization features.

Porter (1982). Porter (1982), utilizing the Nevada data of the Western Regional project (W-159) determined that as the number of behavior changes for energy conservation increased, the number of housing structure modifications also increased ($p<.01$). Those who made the greatest number of behavior changes were also those who made the most structural modifications.

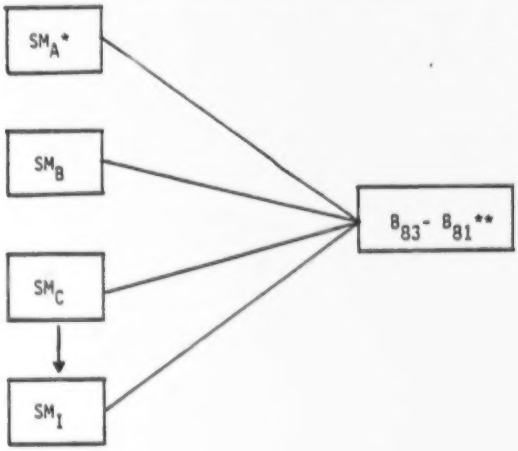
Modeling Energy Conservation Modifications

There is a need to differentiate between structural and behavioral practices for energy conservation (7). Previous researchers have also indicated a tendency for structural modifications to have opposing effects on behavior (8). Compensatory behavior in the form of trade offs of comfort and convenience for weatherization savings was indicated through the PP&L study (5).

A variety of factors are involved in the ultimate residential energy used (8). Consumers can control a large portion of this energy consumption by changing their behavior or by modifying the structure of the dwellings. Behavioral changes and housing structural modifications for energy conservation are examined separately in this study. The conceptual model was derived from and complements previous theories concerning structural modifications and behavioral practices for residential energy conservation. This is accomplished by concentrating on a simplistic overall view, drawing from the various theories, and expanding upon their positive and applicable aspects in an attempt to improve rather than disprove. The conceptual model presented is a mechanism for understanding the relationships among data collected for this study (see Figure 1).

The model developed serves three purposes (see Figure 1). First, a "map" illustrating the manner in which structural modifications are linked to behavior changes is suggested. Second, to monitor changes in energy conservation practices over time and to identify factors related to their occurrences are also provided. The third purpose of the model is to provide a conceptual framework to guide the investigation of the relationships among the relevant variables, structural and behavioral changes affecting energy conservation.

FIGURE 1. Theoretical model: grouped according to type of structural modifications completed.



*SM = structural modification
**B_{83} - B_{81} = behavior change score 1981 to 1983

Methodology

The data for this analysis were obtained from a longitudinal mail survey which was conducted as a project by a Western Regional Agricultural Experiment Station Committee (W-159). Because regional data were not yet available for analysis, the present study is confined to Oregon data.

Statistical Analysis

The statistical analyses used in this study involved two stages: 1) descriptive statistics and 2) t-tests. In the first stage, descriptive statistics were run on the demographic, housing related, independent, and dependent variables and were used to quantitatively describe characteristics concerning the sample from which data were collected. In the second stage, statistical analysis consisted of inferential statistics in the form of the t-test. The t-test provided information concerning the significant difference between the mean behavior change score for those respondents who added specific structural modifications and those who did not.

Unweighted data were used: 1) to compute the descriptive statistics on the demographic and housing related variables and 2) to tabulate the types of structural modifications and behaviors completed. Weighted data were used to compute behavior change scores, numbers of completed structural modifications, and t-tests.

A discussion of the analyses related to the dependent variable, behavior change, and the independent variable, structural modifications follows.

Behavior change. Behavior change was derived from one question of the research instrument in which respondents were asked to report what conservation practices they were using. A behavior change score was created by subtracting the number of behavior measures respondents reported using in 1983 from the number they reported using in 1981. Six criteria were used to assess behavior change (see Table 1).

TABLE 1. Modification related characteristics.

Modification Related Variables[a]	Percent of Subjects Responding (N = 170)
Completed structural modifications	
Weatherstripping/caulking	36.5
Wood-burning stove	32.9
Ceiling insulation	26.5
Double panes/storms	25.3
Storm doors	18.2
Fireplace glass door	18.2
Thick floor insulation	17.6
Insulated window coverings	16.5
Clock set-back thermostat	7.6
1983 energy conservation behaviors	
Open or close window coverings	84.1
Close off rooms	67.6
Reduce water heater temperature 120°F or less	67.1
Set thermostat 65° or less (winter)	51.8
Set thermostat 78° or more (summer)	38.2
Change use of rooms	37.6

[a]Not mutually exclusive.

Structural modification. Nine housing structural modifications were included (see Table 1). Those respondent's responses indicating "Doesn't apply to my home" to three or more behavior variables or five or more structural variables were replaced with a missing value and the score was undefined.

Findings

Sampling Response Rate

1981. Out of the 1503 mailed questionnaires (753 rural, 750 urban), 834 usable questionnaires were returned.

1983. Out of the 1375 mailed questionnaires, 834 were sent to the 1981 respondents applicable to the longitudinal portion of the W-159 study. Of the 834, 600 usable questionnaires were returned for a completion rate of 89.2 percent.

Sample Criteria

Respondents met three criteria to be included in the sample: 1) were homeowners, 2) had completed one or more structural modifications between March, 1981 and March 1983, and 3) were able to be identified longitudinally. Homeowners (n=520) represented 86.7 percent of the longitudinal sample (n=600). Of the 520 homeowners, 170 indicated that they had installed or added one or more energy saving structural modifications after March, 1981 and prior to March, 1983. Descriptive sta-

tistics were computed on this sample of 170 homeowners.

Sample Profile

The sample (n=170) of respondents is described in three categories: demographic characteristics, housing related characteristics, and modification related characteristics.

Demographic characteristics. Males most often responded to the questionnaire. Respondents were characterized by a mean age of 47.7 years, some college education, and median income in the category of $25,000 through $29,999. The top three investment experiences of respondents were a home, a passbook savings account, and a time deposit. The mean investment experience was 4.4 with a range from 0 through 11. Although to be included in the study, respondents had indicated that they owned their home. Evidently not all of these homeowners considered their primary dwelling as an investment.

Housing related characteristics. The modal home value was in the category of $50,000 through $74,999 (33.5 percent) with a mean year of dwelling construction in 1951. Most homes ranged in size from 1001 square feet through 1500 square feet. In the majority (78.2 percent) of homes, electricity was used as fuel for water heating while the distribution among the fuels used for space heating was fairly equal; natural gas (27.1 percent), wood (26.5 percent), electricity (24.7 percent), and oil (20.6 percent).

Modification related characteristics. The variables that dealt with structural energy saving modifications and energy conservation behaviors are presented in this section. Frequency distributions are given for each of the two group variables (see Table 1). Of the nine variables pertaining to structural modifications, 36.5 percent of the respondents indicated weatherstripping and caulking had been completed, 32.9 percent added wood-burning stoves, 26.5 percent insulated ceilings, and 25.3 percent installed double panes or storm windows (see Table 1).

Six energy conserving behaviors served as a basis for determining the number and, in turn, the behavior change by respondent. Of the six energy saving behaviors respondents reported using in 1983, the most commonly reported (84.1 percent) was opening and closing window coverings to take advantage of sun and shade (see Table 1). A majority of respondents also closed off rooms (67.6 percent), set the water heater at 120 degrees F or less (67.1 percent), and set thermostats at 65 degrees F or lower in the winter (51.8 percent).

Discussion of Findings

Limitations suggested by Porter (7) and PP&L (5) were addressed. A theoretical model (see Figure 1) was created to provide a conceptual framework for guiding the investigation and to suggest the manner in which structural modifications are related to behavior change. Nine t-tests were used to compare the mean behavior change scores of two samples, those respondents who added a specific structural feature and those who did not, and then to determine the significance of difference between these two mean scores (see Table 2). For each of the nine comparisons, groups were independently generated based upon whether or not a specific structural modification had been completed. Mean scores reflect the average amount of behavior change. Values above 0 reflect an increase in energy conservation behaviors from March, 1981 to March, 1983. Conversely, values below 0 reflect a decrease in energy conservation behaviors from March, 1981 to March, 1983. With the analyses of the relationships between structural modifications and energy saving behaviors, it was concluded that there were significant differences at the .05 level for two specific structural modifications. Although existing data did not support the hypotheses that behavior changed significantly as a response to the remaining seven energy saving structural modifications, behavior patterns were documented in this study. These patterns are consistant with findings and suggested relationships of previous behavioral energy conservation researchers in a number of ways. The four patterns which emerged in this study will be discussed.

First pattern, the behavior change scores for groups of respondents who completed the given structural feature decreased for four features. Conversely, the behavior change score increased when respondents added the remaining five structural features (Table 3). It is possible to suggest from these findings that the relationship between structural modifications and energy saving behaviors is greater for specific features.

Second pattern, all structural modifications which were classified as systems convert by Jarmul (3) were found in this study to be related to an increase in conservation behaviors (see Table 3). Jarmul (3) classified structural modifications based on: 1) the required amount of capital investment, 2) the amount of physical labor, and 3) the potential for energy saving. He defined two categories, refit which requires the lesser capital investment and physical labor and systems convert which requires the greater. Capital investment and required physical labor may be indications of greater environmental concern on the part of the consumer (4). Economic theorists suggest that households make decisions based on weighing opportunity costs and benefits in the form of time, money, and effort, and selections are those which maximize satisfaction (1).

Third pattern, it is also interesting to note behavior change scores for respondents who did not add specific structural features. Behavior change scores for respondents who did not add a specific structural feature decreased from 1981 to 1983 for all structural features (see Table 3).

Fourth pattern, it was found by this researcher that respondents' behavior seemed to imply conservation motives, but they also undertook compensating actions in the opposite direction, as suggested by two observations. First, lifestyle preservation was indicated by compensatory actions, a decrease in energy conservation behaviors, when wood-burning stoves, weatherstripping and caulking, storm doors, and glass doors on fireplaces were added by the respondents (see Table 3). Although these refit modifications (3) contribute to energy

TABLE 2. Behavior change score summary.[a]

Comparison Point	GROUP: Did not add N	$\bar{X}_b$	S.D.	Added N	$\bar{X}_b$	S.D.	"t" Value	P Value
Double panes/storms	110	-.34	1.50	32	.21	1.32	1.89	.06
Weatherstripping/caulking	90	-.13	1.52	52	-.37	1.39	.93	.35
Ceiling insulation	100	-.49	1.28	40	.52	1.68	3.42	.001**
Floor insulation	101	-.34	1.44	24	.46	1.57	2.45	.02*
Storm doors	111	-.23	1.43	29	-.17	1.68	.18	.86
Clock set-back thermostat	115	-.26	1.43	11	.48	1.83	1.59	.12
Fireplace glass door	74	-.08	1.38	33	-.43	1.35	1.22	.23
Wood-burning stove	90	-.16	1.52	43	-.42	1.36	.94	.35
Insulated window coverings	114	-.26	1.46	24	.02	1.63	.82	.41

[a] t-test summary.

[b] Values above 0 reflect an increase in energy conservation behaviors from March, 1981 to March, 1983; values below 0 reflect a decrease.

*Significant at the .05 level.

**Significant at the .01 level.

TABLE 3. Structural modification and behavior change score summary and categorization.

Structural Modification	Behavior Change: Did Not Add	Added	Jermul (1980) Category
Ceiling insulation	↓	↑	S*
Floor insulation	↓	↑	S*
Double panes/ storms	↓	↑	S*/R**
Insulated window coverings	↓	↑	R**
Clock set-back thermostat	↓	↑	R**
Wood-burning stoves	↓	↓	R**
Weatherstripping/ caulking	↓	↓	R**
Storm doors	↓	↓	R**
Fireplace glass doors	↓	↓	R**

S* = Systems convert.
R** = Refit.

conservation, they also may have been added due to: 1) ease of installation or 2) less capital investment solely for conservation purposes. Pitts, Willenborg, and Sherrell (1981) have used the term "compensatory actions" to explain consumer energy conservation. These researchers state that consumers attempt to preserve their lifestyle by decreasing the number of energy conserving behaviors used following the addition of energy saving structural features and will do so until the attendent costs become prohibitive.

The second observation of an attempt on the part of the respondent to preserve lifestyle is indicated by the types of energy conservation behaviors selected. Respondents who undertook energy conserving behaviors selected those which required very little or no changes to lifestyle and/or comfort (see Table 1). Thus, compensatory behavior in the form of trade offs of weatherization savings for comfort and convenience were also consistent with research findings by Pitts et al. (6).

Based on the research findings, the researcher concludes that the majority of structural modifications for energy conservation seemingly are results of the desire on the part of consumers to reduce energy costs and preserve lifestyles, rather than due to ecological/environmental concerns. First, the most frequently added structural modifications are those which, in general, require less capital investment and for which, government assistance and/or tax incentives are available. Second, energy conservation behavior increased for respondents who added structural modifications for which the purpose is solely to conserve energy. Conversely, respondents who indicated adding structural features which also: 1) are easily installed and/or 2) represent a comparatively smaller capital investment, undertook compensatory actions following structural modifications by decreasing their energy conserving behaviors to preserve their lifestyle. This study documents patterns of behaviors which emerged following residential structural modifications. A better understanding

of residential energy consumption patterns is important to consumers, educators, researchers, utility companies, government officials and others who influence energy programs and policies as well as the housing environment. Knowledge of these behavior patterns may be used by professionals: 1) to educate consumers of indicated behavior patterns and 2) as a basis on which policy decisions can be made to facilitate energy conservation. Only with knowledge of behavior patterns can effective programs and education curricula be planned which sufficiently inform consumers of efficient (effective) energy conservation methods.

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EDUCATION AND EARNINGS OF YOUNG MEN: EFFECTS OF LIVING IN A SINGLE-PARENT FAMILY

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Abstract

This study examines the effect of living in a single-parent family on the educational attainment and earnings of young men. It appears that living in a single-parent family has a direct negative effect on education, but only an indirect impact on earnings via education. The age of the child and the length of time spent in a single-parent family makes a difference.

The increase in the number of children living with one parent has stimulated research in several disciplines on both the short-term and long-term consequences of such living arrangements. In general, these findings indicate that children who grow up in single-parent families are more likely to perform poorly in school, have more emotional adjustment problems, and have lower educational and occupational levels in adulthood than children who live in two-parent families.[1]

The purpose of this study is to focus on one of these areas of research: it examines the effect of living in a single-parent family headed by a female on educational attainment and earnings of males. These areas of adult behavior were chosen because education appears to be the long-term measure of achievement most affected by life in a single-parent family (4, 10), and earnings, traditionally viewed as a long-run measure of economic success (19), are affected by the level of education attained (4).

This study focuses on males. Males are of special concern because research suggests that the impact of marital disruption is more pervasive and enduring for boys than for girls (13). Any reduction in the level of education and earnings of young men attributable to the father's absence has implications for public policy. A lower achievement level can be costly both to the individuals involved and to society as a whole (1). Young men and their families may have a lower level of living because of lower earnings, and society may experience a reduction in aggregate production and an increase in dependency on public assistance.

Review of Related Studies

Earlier research suggests that living in a single-parent family has a negative impact on high school completion of males (18) and of females (22), a negative effect on educational attainment of males (4, 8, 10), and either a direct negative effect on earnings of young men (11) or an indirect effect via the effect of education on occupation and earnings of males (4, 10).

The greatest limitation in these studies is in the instruments used to measure living in a single-parent family. Blau and Duncan (4) asked each respondent if he had lived with both of his parents "most of the time" up to age 16. The other researchers assessed living in a single-parent family at a single point in time: Freeman (8) at age 14, Greenberg and Wolf (1) at ages 15 to 17, and McLanahan (18) at age 17.

Hofferth (14) has illustrated in a life-table analysis the great variability among children in the ages and lengths of time they spent in single-parent families. Of the studies reviewed, only Shaw (22) observed differences in the single-parent experience with respect to duration and age of the child. She found that the likelihood of a daughter finishing high school was lower for young women who spent more than two years in a single-parent family than for those who lived with one parent for a shorter period of time. On the other hand, the age at which the daughter lived in a single-parent family did not appear to make a difference. Shaw's two periods of childhood to represent the age the daughter lived in a single-parent family were "the high school years" and "the years before high school." This investigation was designed to examine the effects of three alternate specifications, more precisely measured than in earlier work, of living in a single-parent family on the socioeconomic achievement of young men 28 to 38 years of age.

Theoretical Framework

The socioeconomic achievement of young men who lived in a single-parent family for some period of time during childhood was analyzed with a theory of household production. This theory is related to the family's ability to combine purchased market goods and services with the home time of household members to produce the commodities it desires (2).

Families generally devote time both to the market and to the home. The market time provides them with income to buy market goods and services to use along with their nonmarket time in household production. Socioeconomic achievement is positively related to inputs of time, especially of the mother (9, 11, 16), and to income of the parents (15). The theory of household production suggests that when time and money income inputs of a single-parent family headed by a female are less than those of a two-parent family, the socioeconomic achievement of the child will be negatively affected, *ceteris paribus*. The father's absence reduces the potential amount of parental time and money income available to the child.

Espenshade (7) has shown that income declines substantially when a two-parent family becomes a one-parent family. Mothers heading families who

[1] For critical reviews, see Longfellow (17) and Ross and Sawhill (21).

receive some kind of family maintenance are likely to have higher incomes than without such payments, but this income usually does not continue for long and is often paid intermittently (23). The mean income in 1982 for female-headed families was one third of the income of married-couple families (25).

Brandwein, Brown, and Fox (5) speculate that children in families headed by a female suffer more from maternal than from paternal deprivation, because these mothers are forced to spread their energies beyond their prior childrearing tasks. The mother's home time inputs are less mainly because she must perform many tasks done by a father in married-couple families. Robinson (20) found that mothers heading single-parent families spend less time in childcare and housework, ceteris paribus, than mothers in married-couple families. While studies show that fathers in general do not spend much time in childcare (27), they often assist the mother in other tasks, provide emotional support and encouragement, provide discipline, and act as a role model to the children (12).

The majority of mothers heading single-parent families are in the labor force (24), which means they have less time available than if they were not working. Working mothers substitute, to some extent, purchased market goods and services for their time. However, working mothers heading single-parent families may or may not have the income available, as do many working mothers in two-parent families, to substitute market goods and services for their limited time.

Hypotheses

It was hypothesized that 1) the socioeconomic achievement of males would be reduced if they ever lived in a single-parent family because of the reduction in parental resources available for human capital investment. In addition, the length of time and the period of childhood spent in a single-parent family are likely to make a difference in the young man's achievement. 2) The child who spent many years in a single-parent family would be more adversely affected because of the influence of continued limitations on time and money income compared to the resources of most two-parent families.

Psychological literature indicates that children who lived in divorced families during the preschool years, versus other periods of childhood, are the most affected (17, 28). It is during these years that parents are the main influence on their children. During the elementary and high school years, teachers take on much of the parents' role in producing achievement. Thus, 3) achievement in adulthood was hypothesized to be the most adversely affected if the child lived in a single-parent family during the preschool years.

Empirical Models

These three hypotheses about the effects of living in a single-parent family were tested with an ordinary least squares regression model. Two indicators of socioeconomic achievement are used: years of school completed by the young men at age 28 and the hourly wage rate reported in 1980 when the young men were ages 28 to 38.

The three specifications of life in a single-parent family, measuring if, for how long, and when the young man lived in a single-parent family were: 1) a dichotomous variable with the value of one if the young man ever lived in a single-parent family and zero otherwise; 2) a continuous variable equaling the number of years (given in fractions of years) he spent in a single-parent family; and 3) a series of three dummy variables representing the periods during his childhood in which he lived in a single-parent family.[2] The three periods are: a) the preschool years, from birth to age 5½, b) the elementary school years, ages 5½ to 13½, and c) the high school years, ages 13½ to 18.

Education Model

The education function relates years of formal schooling completed to the resources available in the home. The equation is:

$$\text{Education} = f\ (T_{1,\ldots n},\ X_{1,\ldots n},\ E_{1,\ldots n}), \qquad (1)$$

where education is the actual years of formal schooling completed at age 28,

$T_{1,\ldots n}$ is a vector of time inputs:
- T_1, one of the three measures of living in a single-parent family,
- T_2, whether or not the mother ever worked,
- T_3, actual number of siblings (also an income input);

$X_{1,\ldots n}$ is a vector of income (goods) inputs:
- X_1, total 1966 family income during the high school years,
- X_2, four dummy variables representing the number of types of reading materials available:

$E_{1,\ldots n}$ is a vector of the ability and human capital of the parents, and other control variables:
- E_1, actual years of school completed by the mother,
- E_2, actual years of school completed by the father,
- E_3, black (race of respondent), and
- E_4, South (region of residence).

A vector of inputs which are likely to affect education include the father's presence or absence from the home and the mother's labor force

[2]The mother's marital history is used to construct variables representing time the son spent in a single-parent family. This is a legal rather than a functional definition, since it does not necessarily reflect the actual living arrangements of the child. An "occurrence" in a single-parent family is defined as the time between the end of one marriage or birth of the child if born out of wedlock and the beginning of the next or the son's 18th birthday. Length of time spent in a single-parent family is the sum of the number of years in each occurrence. The age of the child at the beginning of each occurrence and the duration of that occurrence are used to construct variables representing the period of childhood that the respondent spent in a single-parent family: the preschool, elementary, and high school years.

participation. A factor affecting the amount of time and income available for human capital investment in the child is the presence of other children, i.e., the number of siblings the child has. A vector of income inputs includes the total money income of the family available to purchase market goods and services for making human capital investments in the child and reading materials as an example of a market good input for producing educational attainment. Other factors likely to affect educational attainment are a vector of family background inputs representing the ability of the parents in combining time with market goods and services. These factors include the mother's and the father's education. Race and region of residence of the respondent are included in the model as control variables.

Earnings Model

Living in a single-parent family is expected to have a small, direct (negative) effect on earnings of young men. Household time and money income are likely to affect earnings for the most part indirectly via the education of the respondent.

Family background inputs, e.g., mother's and father's education, have been shown to influence earnings largely through years of schooling or occupational status of the young adult (3). Education, an earlier output of the household production function, operates as an input in this model to produce earnings.

The empirical model for earnings of young men is:

$$\text{Earnings} = f\ (SP,\ HC_{1,\ldots n},\ E_{1,\ldots n}), \qquad (2)$$

where earnings is the natural logarithm of the hourly wage rate in 1980,
SP is one of the measures of living in a single-parent family,
$HC_{1,\ldots n}$ is a vector of human capital investments:
- HC_1, actual years of formal schooling completed,
- HC_2, whether or not formal postschool training was obtained,
- HC_3, years of work experience (age minus education minus five),
- HC_4, work experience squared,
- HC_5, whether or not health limits work;

$E_{1,\ldots n}$ is a vector of control variables relating to the year of the wage rate:
- E_1, veteran status or not,
- E_2, private (class of worker),
- E_3, number of weeks worked per year,
- E_4, black (race of respondent),
- E_5, South (region of residence),
- E_6, residence in SMSA or outside,
- E_7, three dummy variables representing marital status (married with spouse present, single, otherwise not married), and
- E_8, number of dependents excluding wife.

Education, training, and work experience are components of the human capital model of earnings used by economists (1, 19). Some also consider health as a human capital investment affecting earnings (1). When health limits the type and quality of work a person can do, earnings are likely to be lower. Control factors included in this model are: race, region of residence, residence in an SMSA, class of worker, veteran status, weeks worked per year, marital status, and number of dependents of the respondent.

Data

A matched mother/son sample was constructed for this study using two data sets of the National Longitudinal Survey of Labor Market Experience: the Survey of Mature Women and the Survey of Young Men (6).[3] Data are from the 1967 to 1979 interviews with mothers and 1966 to 1980 interviews with their sons. The sons were 28 to 38 years old in 1980.

Much of the information pertaining to the young man's childhood, including the mother's marital and employment history and family income, was obtained from the Survey of Mature Women. Data relating to education, other human capital investments, and earnings are from the Survey of Young Men. Some information applicable to this study is not available because the mother did not report certain items, e.g., family income, until her first interview in 1967.[4]

About one fourth of the young men spent some time in a single-parent family. They spent, on average, 6.7 years with one parent from birth to age 18. More than one quarter of the young men from single-parent families did not complete high school compared to somewhat more than one tenth of those who always lived with two parents. The proportion of young men from single-parent families who completed a bachelor's degree is one half the proportion of those who always lived in two-parent families.

The education of mothers and fathers of sons who have lived in single-parent families is about one year and one half of one year less, respectively, than the education of parents of sons who did not. A larger proportion of mothers who headed single-parent families worked at least six or more months in any one year during their sons' first 18 years. Total family income (of the family of origin) during the young man's high school years was lower for those who lived in single-parent families than for those from two-parent families.

Empirical Analysis

This section presents the results of regression analysis of the effect of living in a single-parent family headed by a female on educational attainment and earnings of young men. The different single-parent variables are entered in three separate equations. The first analysis contains

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[3] The Center for Human Resource Research provides a listing of family identification numbers to match the sons with their mothers. Each of the data sets represents a different age-sex cohort in the civilian, noninstitutional population of the United States. Each cohort is represented by a national probability sample of 5000 plus respondents with an oversampling of blacks.

[4] In order to include family income data for all the respondents in the sample, the analysis for education was restricted to the 28-to-32-year old men.

the dichotomous variable, if ever lived in a single-parent fmaily. The second analysis substitutes number of years spent in a single-parent family for the dichotomous variable. The third analysis contains the dummy variables representing the periods of childhood spent in a single-parent family.

Effects on Education

The effects of different measures of living in a single-parent family on years of formal schooling completed by young men at age 28 were examined. Table 1 presents the estimated coefficients of these three measures plus the other independent variables.[5]

TABLE 1. The Effects of Living in a Single-Parent Family on Years of School Completed by Young Men at Age 28.

Independent Variables		Independent Variables	
If ever lived in a single-parent family	-.540*** (2.62)	If mother ever worked	-.438** (2.43)
# years in a single-parent family	-.084*** (3.75)	Reading materials, one type	.017 (.05)
		Reading materials, two types	.363 (1.11)
Period of childhood spent in a single-parent family		Reading materials, three types	.848** (2.49)
Preschool	-.766*** (2.91)	Mother's education	.185*** (5.28)
Elementary school	-.054 (.18)	Father's education	.119*** (4.17)
High school	-.281 (.93)	Know father's education	-1.630*** (4.79)
		Family income	$.430 \times 10^{-4}$** (2.39)
# siblings	-.142*** (4.27)		
		Constant	11.617*** (22.46)
South	.184 (1.06)	$\bar{R}^2$	.217
Black	.163 (.75)	N	798

Note. Unsigned t-statistics are in parentheses.

*Significant at the 10% level, 2-tailed, t-test.
**Significant at the 5% level, 2-tailed, t-test.
***Significant at the 1% level, 2-tailed, t-test.

It was hypothesized that education of the young men who lived in single-parent families would be lower because of limitations of time and income placed on these families. The findings indicate that young men who ever lived in single-paremt families completed .54 fewer years of school than men who did not (significant at the 1% level). These findings are consistent with those of Freeman (10) and Shaw (22).

Number of years spent in a single-parent family is considered next. The findings indicate that each additional year spent in a single-parent family reduces education by .08 years. The results are significant at the 1% level. This estimate implies that the education of young men who spent less than the average 6.7 years in a single-parent family was not as affected; whereas, those young men who lived for more than the average length of time in this sample in a single-parent family completed even fewer years of school than the whole group who ever lived in a single-parent family. These results are consistent with the hypothesis that the negative impact of living in a single-parent family would increase with the number of years the young men lived with only one parent.

Living in a single-parent family during any of the three periods of childhood has a negative effect on years of school completed. However, only the preschool period has a significant effect (at the 1% level) on years of school completed; this finding is consistent with the third hypothesis presented in this paper and the research of Wallerstein and Kelly (28). Young men who lived in a single-parent family during their preschool years--not exclusive of the other periods--completed .77 fewer years of school than those who did not.[6] Living in a single-parent family during the elementary or the high school years does not seem to matter much. These findings suggest that the age of the child and the length of time he spent in a single-parent family does make a difference.

The coefficients of the other independent variables with the first measure of living in a single-parent family are discussed next. Number of siblings and ever having had a working mother both decrease the boy's educational attainment. Each additional sibling decreases the years of school completed by .14 years, and if his mother ever worked during his childhood, by .44 years.

Reading materials available to a child are an important determinant of his level of education. If the boy had a library card and if newspapers and magazines were in the home, educational attainment was .85 years higher. Having one or two of the three types of reading materials has a positive, but not a very large impact on education.

Both mother's and father's education are positively related to the level of education attained by the son. The mother's education appears to be a more important determinant than the father's education, increasing the young man's education somewhat more for each year of school she has completed.[7]

[5]The coefficients of the control variables differ only slightly with each of the three measures of living in a single-parent family. Hence, only the coefficients with the first measure of living in a single-parent family are reported in Table 1.

[6]Interaction variables which represent living in a single-parent family for more than one period of childhood were added to the regression equation with the preschool, elementary school, and high school variables. None of the interaction variables were significant and the coefficients of the period variables discussed in this paper changed only slightly.

[7]The coefficient of the dummy variable knowing the father's education cannot be interpreted alone, but only along with the father's education variable. Knowing the father's education when it is about 11 years or higher (the mean is 10.4) has a positive effect on a son's education [(.124 x 11)

The higher the family income during the boy's high school years the greater his education. For example, a young man with a family income of $15,000 during his high school years completed about a half year more of school than a young man with an annual family income of $5,000. This finding is consistent with the theory, that income is directly related to the level of education attained. Being black and living in the South do not have a significant effect on a young man's education.

Effect on Earnings

It was hypothesized that the direct effect of living in a single-parent family on the earnings of young men would be small, because time and money income and also the family background would affect earnings indirectly through education. To test for the additional effect of living in a single-parent family, each measure of living in a single-parent family was entered with the human capital investment variables and the other control variables in the earnings regression equation. Table 2 illustrates the coefficients of the three measures of living in a single-parent family and of each of the independent variables in the earnings equation with the first measure of living in a single-parent family.

The coefficient of ever lived in a single-parent family suggests that the direct effect of living in a single-parent family on the earnings of young men is very small, net of the effect through schooling, reducing earnings by about 5%. The coefficient is not significant. Thus, as expected, the main impact of living in a single-parent family on earnings is through the reduction in years of formal schooling completed by the young men. The length of time lived in a single-parent family has no significant effect on earnings, nor does the period of childhood.

The human capital investment variables (formal schooling, postschool training, and work experience), as expected, have a positive influence on earnings. Working in the private sector as opposed to the government sector and living with an SMSA have a positive effect on earnings, whereas having a health problem that limits the work the respondent can do, being single or otherwise unmarried, being black, and living in the South all have a negative impact on earnings. The weeks worked during the year have a very small, but significant impact on hourly earnings of young men in the sample.

TABLE 2. The Effects of Living in a Single-Parent Family on Earnings of Young Men Ages 28 to 38.

Independent Variables		Independent Variables	
If ever lived in a single-parent family	-.053 (1.54)	Health limits work	-.162*** (2.59)
		Weeks worked per year	.006*** (3.85)
# years in a single-parent family	.001 (.39)	Black	-.112*** (3.00)
Period of childhood spent in a single-parent family		South	-.113*** (3.62)
Preschool	-.012 (.23)	SMSA	.231*** (7.26)
Elementary school	.027 (.48)	Marital status	
High school	-.058 (1.16)	Single	-.165*** (3.71)
		Spouse not present	-.102** (2.11)
Years of school completed	.059*** (6.28)	# dependants	.017 (1.38)
Training	.083** (2.46)	1980 (year of wage rate)	.206*** (5.16)
Experience	.109*** (4.53)	Constant	-.243 (.36)
Experience squared	-.004*** (4.24)		
Veteran	.004 (.14)	R^2	.299
Private (class of worker)	.126*** (3.20)	N	859

Note. Unsigned t-statistics are in parentheses.

*Significant at the 10% level, 2-tailed, t-test.
**Significant at the 5% level, 2-tailed, t-test.
***Significant at the 1% level, 2-tailed, t-test.

Conclusions and Implications

The results of these analyses indicate, in general, that living in a single-parent family has a direct negative impact on education, and an indirect negative impact on earnings via education. This study, however, does more than confirm the results of previous research. The results demonstrate the importance of examining different measures of living in a single-parent family. They suggest that young men who lived for many compared to a few years in a single-parent family and that those who lived in a single-parent family during the preschool years, as compared to the other childhood periods, are the most adversely affected.

While life in a single-parent family during a boy's childhood can have a negative influence on his future level of education and earnings, it is important to recognize those factors mitigating the impact. Many studies, including this one, have shown that the negative effect of living in a single-parent family results in part from a reduction in the family's income. Public policies to provide financial support for the family, whether it be in the form of income transfers to the poor, job training, or enforcement of child support, need to be encouraged. Vickery (26) proposes that time resources, in addition to money income, be considered in income support programs.

For those mothers who work, it is especially important to have preschool education programs in affordable day care that supplement the mothers' time in making human capital investments in their children. Mothers also benefit from job training,

+ (-1.312 x 1) = +.052)], while below that amount knowing the father's education has a negative impact. This may imply that if the educational level of the father is low, it may be a source of discouragement rather than encouragement for the son to attain a high level of education.

decreasing occupational segregation, equal pay for equal work, alternate work schedules, displaced homemaker programs, and after-school programs for their children.

Mothers can benefit from programs on how to adjust expenditures to a lower level of living, on how to manage their time, money, and energy resources more effectively, and on how children in single-parent families adjust to their new life style. Children should be encouraged to participate in library, school, and other community educational programs after the school hours. Home economists and other practitioners involved with children need to be aware of age differences in family life adjustments and consider these in programming.

The effect of family relationships, adjustments to marital disruptions, support networks, peer influences, and other educational resources merit additional study. Comprehensive measures of the quantity and quality of time of family members, especially of the mother, and of income are desirable. The future socioeconomic achievement of children growing up in single-parents today and tomorrow has bearing on the future economic productivity of society and the economic well-being of future families.

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WESTERN REGIONAL FAMILY ECONOMICS-HOME MANAGEMENT
EDUCATORS GUIDE FOR AUTHORS AND TYPISTS

1984 Proceedings Editor, Western Regional Family Economics-Home Management Educators

Abstract

This guide provides instructions to authors and typists concerning the format and style of manuscripts to appear in the Western Regional Family Economics-Home Management Educators Proceeding, 1984. The volume will be printed by directly photographing the "oversized" sheets you submit. To ensure a consistent and quality proceedings, it is critical that each author follow the instructions precisely.

Instructions to Authors

This sheet fully specifies the format of the paper which you submit for publication. Papers may not exceed seven oversized pages. Approximately 2 1/2 pages of double spaced copy fit on an oversized page. With each original oversized manuscript, the author should also submit one other reduced (8 1/2" x 11") copy.

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The title should be in all capital letters and centered at the top of the first page (not centered over the left column), starting on the third line from the blue border at the top. If more than one line of title is required, single space between the lines.

Authors

The author(s) and affiliation(s) should be centered and single spaced, beginning on the second line below the title. Place professional titles in footnotes at the bottom of the left column of the first page of the manuscript. (See "Footnotes" for format.) Below are two appropriate examples:

Jennifer White, ABC University[1]
Jonathan Brown, Federal Trade Commission[2]

It should be emphasized that the title of the paper, the author(s), and affiliation(s) are the only material that will be typed across the blue lines which delinate the two columns of the page.

Headings

First level headings should be centered and in capitals and small letters. (See the "Instructions to Authors" heading.) Second level headings should be left adjusted, and in capitals and small letters. (See "Title" heading.) If a third level of heading is absolutely necessary, use the run-in side head, underlined and followed by a period. Do not place a heading at the bottom of a column if there is not room to begin the relevant text.

Abstract

An abstract of approximately fifty words should be placed before the body of the text. The word "Abstract" Should be centered and treated as a main heading. Set off the abstract by a line of underscoring up to and after the title "Abstract" as shown. A bottom line of underscoring should immediately follow the abstract.

Figures and Tables

Figures and tables should be placed as close as possible to the location where they are cited. Labels should start at the left margin and be immediately followed by the title which describes the content of the table or figure, as follows:

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All figures and tables must meet the criterion of photo reproducibility. Any symbols or parts of a figure which cannot be typed should be carefully drawn in with black ink. If possible, please format your tables and figures to fit within a single column. You may photo-reduce figures or tables to save space on the original manuscript, but keep in mind that the photocopy must be good dark print and that the manuscript will be reduced again for printing. If you reduce a table or figure, do not reduce the label and title.

Footnotes

Explanatory footnotes should be numbered consecutively and placed at the bottom of the page and column in which they appear. They should be separated from the body of the text by a line one inch long.* Footnotes should not be attached to equations. The footnotes should be within the typing margins.

Equations

All equations should be placed on separate lines and numbered consecutively. These consecutive numbers should be placed within parentheses and aligned against the right margin as shown below.

$$A = F(X_1+X_2 \ldots X_n) \quad (1)$$

$$A = \sum_{i=1}^{n} B_i a_i \quad (2)$$

(3)

Be certain that all symbols are adequately defined.

[1]Professor of Consumer Economics

[2]Director of Federal-State Relations

*A one-inch line is twelve spaces.

Citing References

When referring in the text to a reference on your reference list (bibliography), insert its number in parentheses, including page numbers if appropriate. Example: (15, p. 35). Follow Journal of Consumer Affairs format.

Appendices

Appendices, if needed, should immediately follow the body of the paper and precede the references. The work "Appendix" should be centered at the top of the appendix.

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The title "References" should be centered above the list of references and entries should be in a numbered list in alphabetical order by last name of first author, last name first.

Book reference form should be:

Cohen, Morris L. Legal Research (St. Paul: West Publishing Company, 1976).

Journal reference form should be:

Lord, Blair and Silvia Lane, "The Impact of the Rhode Island Catastrophic Health Insurance Plan," Journal of Consumer Affairs 13 (Winter 1979), 186-205.

Resolve any additional documentation problems by consulting A Manual of Style (U. of Chicago Press, 1969), section 16.

Instructions to Typists

An IBM electric typewriter must be used. The type (freshly cleaned) should be Prestige Elite.

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Deadline

Please have your camera-ready manuscript received by the editor in Hawaii by October 15, 1984. Please allow four days for delivery.

ADDENDUM

to the 1984 proceedings of

WESTERN REGION HOME MANAGEMENT-FAMILY ECONOMICS EDUCATORS

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A PATH APPROACH TO INCOME UTILITY AND DISTRIBUTION IN THE HOUSEHOLD

Ruth E. Berry, University of Manitoba[1]

Abstract

The purpose of this study was to examine the relationship of disagreement over financial expenditures to income satisfaction or utility, satisfaction with spouse, and quality of life. Survey data collected from 262 nuclear families in Indiana were analyzed using multivariate analyses and path analysis techniques. Conceptual models were developed following a literature search of both theoretical and empirical work. Path analysis, testing the causal model, revealed that disagreement over finances did contribute to satisfaction with quality of life indirectly, through satisfaction with spouse for husbands, and through satisfaction with spouse and income satisfaction for wives. Husbands and wives in this study showed dissimilar routes to the achievement of income satisfaction, and satisfaction with quality of life.

Introduction

The allocation and distribution of resources within the household is of concern in times of decreasing real income. The potential for increasing income utility and therefore increasing a family's satisfaction with its level of income may be enhanced if there is more understanding of the role of disagreement over financial expenditures.

The current restraints on the national economy are restricting the incomes of many recipients of government assistance programs, such as food stamps and social security. Those in the labor force are also affected by an inflation rate which, although lower in the 1980's, may still outstrip gains in wages and salaries. In these times, an understanding of how utility from given amounts of resources can be maximized to maintain or improve the economic well-being of each economic subgroup within society is desirable.

The major purpose of the study was to assess the role of disagreement over financial expenditures in income utility and satisfaction. The study examines the relationship of disagreement over financial expenditures to the achievement of economic well-being to determine whether the disagreement intervened with other factors, or the disagreement itself contributed to income satisfaction.

Justification and Rationale

The economic aspects of marriage have all too often been ignored by writers and researchers in the family life disciplines. They tend to underplay the importance of financial security, regularity of income and the management of resources to the successful functioning of the family. Even though many studies have indicated that disagreement over money was a salient factor in marital instability [5,16,7,9,1], this has rarely been followed up either in textbooks or family theory, nor has it played a part in family therapy.

Traditional economic theory has seldom considered the distribution function which takes place within the individual household, concentrating instead on production and consumption. Only recently has research begun to emerge which considered the multi-person consuming unit which must allocate scarce resources and maximize the utility of the group, rather than of the individual consumer. This work has been theoretical in nature, and has not applied the emerging theory to testing in the field. The role of disagreement over financial expenditures, using survey data collection techniques, adds an unresearched and novel dimension to the understanding of the use of pooled resources in a family unit.

Much of the work on quality of life has considered both objective factors, such as education and age, and subjective factors, such as perceived adequacy of income [4,18] in developing a comprehensive assessment of economic well-being. The interaction between the effects, however, in the area of disagreement over finances, has not been fully explored. This study examined the relationship of socioeconomic variables to economic behavior during the activities of distribution as they related to income satisfaction and quality of life. Disagreement over financial expenditures as a proxy for the economic behavior of distribution between husband and wife was expected to affect income satisfaction directly, and indirectly affect quality of life.

Theoretical Framework

Utility theory, a cornerstone of economic theory, represents the level of satisfaction that a consumer derives from a particular combination of goods and services. Rational consumers attempt to maximize their utility and purchase optimal combinations of goods, given their income constraints.

When utility theory is applied to the two-person consuming unit, some aspects change. Individuals differ in the amount of satisfaction they receive from the same goods and services [8]. When two individuals are consuming from a pooled income in a family or family-like relationship, compromises will need to be made in the use of this income. These compromises, or gains and losses, may lower the personal utility for an

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individual family member. If this compromise can be reached easily because the members are in agreement, no loss in time or energy will ensue, and as each member has had to give up less, therefore each can reach a maximal point on an indifference curve. If, however, major disagreement over income use occurs, the conflict resolution will exact a toll in time, energy frustration and increased search. It follows that more resources are used in making the decision, which lowers the budget constraint. The new budget constraint lowers both the utility curve and total utility for the consuming unit. This disagreement also lowers personal utility and satisfaction with income use.

Conventional economic theory has assumed that one head has absolute power within the family and his or her demands are reflected in consistent indifference curves. Most families, however, consist of two or more persons, each of whom consumes his own goods and has indifference curves ordering these goods. Although his preferences are independent of the other members' consumption, Samuelson [17] indicates that the preferences of the different members are interrelated by a "consensus" or "social welfare" function. He shows that the family acts as if it were maximizing its joint welfare function. The consensus decisions which are made in allocating resources to different individuals within the family, and the "costs" of these decisions are not considered. An earlier paper [12] limited discussion of the aggregation of preference orderings to the binary case. Most aggregate choices are not binary, and thus the theory has little relevance to the reported behavior of individuals and families.

Some theory is now being developed which considers the dynamics of a husband-wife dyad in an economic context and has been termed "the new home economics". This work developed from that of Becker [2], Mincer [13], Reid [15] and others. The family is viewed as "an economic unit which shares consumption and allocates production at home and in the market as well as the investments in physical and human capital of its members" [14].

Ferber and Birnbaum [6] have developed a model which holds that the economic well-being of the husband and wife over the life cycle is more than the commodities available to them. This work evolved from the earlier research of Lancaster [11] who showed that consumers were not interested in goods themselves, but the bundle of characteristics that these goods provided.

Ferber and Birnbaum hypothesize:

(1) $W_f = f(W_i, W_j)$ (1)

where W_f = well-being of family

and W_i, W_j = well-being of each spouse. The well-being of the family is a function of the well-being of the husband and the wife.

They surmize that the well-being of each partner is dependent on family consumption, satisfaction from work and leisure, status, ability to function independently and the well-being of the other spouse. The model is depicted as:

$W_i = f(C, S_i, I_i, V_i, k_i W_j)$ where (2)

W_i = well-being of each partner
C = family consumption
S = direct satisfaction from his/her work or leisure
I = extent to which individual could function independently
V = status enjoyed within the family
$k_i W_j$ = the well-being of the other spouse, weighted by the value this individual places on the other's well-being.

Ferber and Birnbaum qualify their model as incapable of being tested and not intended to describe present behavior, however they do recognize that the well-being of each member of the consuming unit is essential in order to enhance family economic well-being.

The Causal Model

The preceding theoretical frameworks, and the review of literature, provided the foundation for the proposed theoretical model. Background characteristics included as independent variables were family income, educational level, number of years married, number of children, communication, management procedures, wife's employment status, value rank agreement, net worth and perceived future security. Each independent variable was examined by the Pearson product-moment correlation. There was no correlation between any pair of independent variables above 0.36, therefore, problems of multicollinearity would appear to be minimal.

The intervening variable was disagreement with financial expenditures. This was hypothesized to be dependent on the independent variables. This intervening variable then affected the intermediate variable, satisfaction with income. The independent variables were expected to affect satisfaction with income indirectly, through the intervening variable of disagreement. The relationship between disagreement over financial expenditures and marital satisfaction was expected to be negative based on the literature surveyed. Marital satisfaction was hypothesized to be an intermediate causal factor leading to satisfaction with the quality of life. It was expected that a direct effect would also be evident between disagreement over financial expenditures and income satisfaction. These two variables, income satisfaction and satisfaction with quality of life, were hypothesized to be dependent on the other variables in the model.

The causal model tested in this paper builds upon the Ferber and Birnbaum [6] model which hypothesized that economic well-being was a function of the separate well-beings of each partner in the marital dyad. This model adds the intervening variable of disagreement over financial expenditures which is expected to lower the utility of the income, with increasing degrees of disagreement. This, in turn, affects marital satisfaction which Ferber and Birnbaum

hint at, but never fully develop, in their 1977 model.

Methodology

This study made use of both primary and secondary data from the research project NC-128 "Quality of Life as Influenced by Area of Residence" sponsored by the Agricultural Experiment Stations of 13 states. The data for the study were collected in Indiana, during the summer of 1977, from a random sample in both a metropolitan and non-metropolitan area. Eligibility for the sample was restricted to households containing nuclear, intact families with at least one child under 18 years of age living at home.

Completed questionnaires, which had been administered by trained intervicwers, were received from 130 metropolitan and 132 non-metropolitan households. The sample of the Indiana population had a reported family income in 1976 which was considerably above the median for the United States of $14,958 [20]. One-third of the sample families had an income of $20,000 to $29,999 and one-fifth had incomes of $15,000 to $19,999. The mean educational level for men and women in the sample was 13.38 years compared with 12.4 years for the United States [20]. One-third of the wives in the sample were not employed which was a lower rate than for the nation as a whole. In 1978, the labor participation rate was 50.2 for married women with husband present and children under 18 [19]. The mean ages of men and women in the total sample were 38 and 35, compared with men and women of 30 and 28 respectively, in the United States in 1976 [20]. The average size of the family in 1977 was 3.37 persons compared with 4.42 for the families in this study.

Variables

Independent Variables

Family income was defined as "total income received during the year, before taxes". Educational level and number of years married were collected as continuous data, as were the number of children. Communication scores were assessed by using the total score on two questions: "How often do you and your spouse talk over pleasant things that happen during the day?" and "How often do you and your spouse talk over unpleasant things that happen during the day?" A five point scale, ranging from never to very frequently, was used. The two scores were totalled and this total score, ranging from two to ten was used. Since the amount of communication was of interest, rather than whether its content was positive or negative, a total score was appropriate.

Management procedures were defined as management activities performed by men and women. The items of management procedures were inventories of actual behavior, and assessed 14 activities such as "regularly estimates expenditures that family income will have to cover" and "rarely has to pay finance charges on purchases made with credit cards?" These measures were developed by an NC-128 committee based on their review of theory of management procedures [10] and were pretested in the field. The items making up the management procedures score were summed for the management procedure variable. The scale of individual management activities yielded a Cronbach's alpha coefficient of reliability of over .81 for four different subgroups. Positive correlations among the items in the correlation matrix indicated that the items were measuring management characteristics and justified keeping the 14 items in the scale [10].

Wife's employment status was assessed by asking whether the wife worked for money. Three alternatives were given: no; yes, less than 35 hours per week; and yes, 35 hours per week or more. For regression analysis, the original variable was converted into two dummy variables, with "not working for money" as the omitted category.

Value rank agreement was assessed by a question which asked respondents to choose their three most important and three least important values from a list of nine possible choices. Husbands and wives gave a ranking of one, two, and three to the most important domains with a one indicating the highest ranking. They gave a ranking of seven, eight and nine to the least important domains with nine indicating the lowest ranking. The remaining three domains were assigned a "tied" value of five, indicating the middle range ranking. The specific domains which were ranked pertained to housing, leisure and recreation, education, financial security, work, religion, community, family, and friends.

Net worth figures were determined by asking respondents the estimated value of all of their family assets, and subtracting from this the respondents estimated total of all of the family debts. This figure was then verified by the respondents. It was converted to a natural logarithm for use in the regression analysis, because the variable had a wide range of values. The income measures included in the variable list provide a time perspective on the family's economic well-being. Net worth looks at the accumulation of assets and reflects past income from many sources. Current income figures are included, as well as a future dimension, perceived future security. One question looked at expectations of the future and asked respondents to state whether they were satisfied with their prospects for a financially secure retirement on a seven point scale from extremely dissatisfied (1) to extremely satisfied (7).

Dependent Variables

The dependent variable, disagreement over financial expenditures, is the proposed intervening variable in the path analysis and an independent variable in the second regression model. This was one of 13 subject areas surveyed for the manner and amount of disagreement intensity they engendered within the family. These areas, which included religious beliefs and practice, use of leisure time, sexual relations as well as family expenditure, had been synthesized from the literature on family inter-

action by an NC-128 committee. Family expenditure was further defined for the clarification of the respondents as "how money should be spent". Answers were recorded on a five point Likert-type scale: (1) extremely intensive, (2) intensive, (3) somewhat intensive, (4) calm, and (5) mild/rational.

The dependent variable in the third regression model, and an intermediate variable in the path analysis was satisfaction with spouse which served as a proxy for marital satisfaction. The levels were: (1) extremely dissatisfied, (2) dissatisfied, (3) somewhat dissatisfied, (4) mixed, (5) somewhat satisfied, (6) satisfied, and (7) extremely satisfied.

Other dependent variables were satisfaction with family income and satisfaction with quality of life, both of which were measured and recoded in the same manner as satisfaction with spouse. In all cases, these ranges were skewed toward the "very satisfied" end of the scale. Of the wives, 159 or 63.1 percent and 110 or 58.2 percent of the husbands respectively reported being "very" or "extremely" satisfied with the quality of their life. This skewness is similar to results of other quality of life studies [4,21]. Campbell [4] shows in tabular form the results of four nationwide quota samples measuring quality of life from 1957 to 1972. These show 84 to 91 percent of respondents answering that they were "very happy" or "pretty happy" depending on the study selected.

Analysis

The dependent variables of income satisfaction and disagreement over financial expenditures were used in a recursive regression system anticipating a one-way causation. It assumed that income utility or satisfaction was a function of disagreement over financial expenditure.

The preceding theoretical frameworks, and the review of literature, provided the background for the proposed model. This model incorporated a number of exogenous (background) factors as inputs, and tested whether these contributed more to marital and income satisfaction through disagreement as a mediator, than as directed predictors of satisfaction with marriage, income and quality of life. Separate models were constructed for husbands and wives. These were also the initial structural equations used for the path analysis.

The first model hypothesizes:

$$DFX = B_0 + B_1 I + B_2 ED + B_3 YRSMAR + B_4 CHILD + B_5 COMM + B_6 MGT + B_7 EMP + B_8 VAL + B_9 NW + B_{10} FUTSEC \quad \text{where} \qquad (3)$$

DFX = disagreement over financial expenditures

I = family income

ED = educational level of husband and wife

YRSMAR = number of years married to present spouse

CHILD = number of children living at home

COMM = husband/wife communication

MGT = management procedures

EMP = wife's employment status

VAL = value rank agreement

NW = net worth

FUTSEC = perceived future security

The second model adds disagreement over financial expenditures as an independent variable, in addition to the exogenous variables, as a function of income satisfaction. The form is:

$$IS = B_0 + B_1 DFX + B_2 I + \ldots B_{11} FUTSEC \qquad (4)$$

where

IS = satisfaction with family income.

The third model adds income satisfaction as an independent variable, and satisfaction with spouse is the dependent variable. This is expressed as:

$$SS = B_0 + B_1 IS + B_2 DFX + B_3 I + \ldots B_{12} FUTSEC \qquad (5)$$

where

SS = satisfaction with spouse.

Finally, satisfaction with quality of life is used as the dependent variable. The model then incorporates both the exogenous variables and the former dependent variables as independent variables. The model states:

$$QOL = B_0 + B_1 SS + B_2 IS + B_3 DFX + B_4 I + \ldots B_{13} FUTSEC \qquad (6)$$

where

QOL = satisfaction with quality of life.

Path analysis was used to further develop the regression model. This related the network of salient variables in such a way that their effects could be examined simultaneously with each relationship holding constant or controlling for others. This tested for direct and indirect relationships. Variables were simultaneously entered into the equations in the multiple mode. Tables 1 and 2 show the regression coefficients (B's), standardized regression coefficient (betas), and F statistic of all variables in the model. The model was trimmed by selecting variables with F ratios of 2.5 or higher to be retained. The five percent level of significance requires an F ratio of 3.84. The 2.5 criterion was used in order to provide a conservative test which would reject the direct influence of the background variables on the intermediate and dependent variables. The final model is illustrated in Figures A and B.

Table 1. Multiple Regression of Satisfaction with Quality of Life with Initial and Final Set of Variables for Husbands

	Initial Model			Final Model		
	Coefficient	Beta	F-Ratio	Coefficient	Beta	F-Ratio
Family income	.2423	.0324	.1689			
Educational level	-.2177	-.0454	.9080			
Years married	-.2329	-.1525	5.2545**	-.2381	-.1562	5.8080**
Number of children	a	a	a			
Perceived future security	.0660	.1078	2.4035	.0972	.1116	2.7537*
Net worth	.1766	.1273	3.4720*	.1775	.1279	3.9410**
Wife's employment (part)	-.1999	-.0715	1.1531			
Wife's employment (full)	-.2424	-.0935	2.0230			
Value rank agreement	-.2001	-.0236	.1438			
Management procedures	.1239	.1195	3.3586*	.1238	.1231	3.8345**
Communication	.1312	.0189	.8591			
Disagreement over finances	a	a	a			
Satisfaction with income	.3465	.3395	28.5567***	.3275	.4226	38.3188***
Satisfaction with spouse	.3212	.0148	28.5468***	.3550	.3478	31.9701***
Constant	.7226			-.1834		
R^2	.45			R^2	.43	
F	10.15			F	20.11	
df	12,151			df	6,157	
p	.001			p	.001	

***p < .01
**p < .05
*p < .10
a = F level insufficient for further computation

Table 2. Multiple Regression of Satisfaction with Quality of Life with Initial and Final Set of Variables for Wives

	Initial Model			Final Model		
	Coefficient	Beta	F-Ratio	Coefficient	Beta	F-Ratio
Family income	.5535	.0783	1.7748			
Educational level	.2207	.0465	.7516			
Years married	-.7384	-.0627	1.0136			
Number of children	.2118	.0220	.1839			
Perceived future security	.0426	.1164	4.0901**	.0389	.1799	5.9550**
Net worth	.1170	.1067	3.9621**	.1412	.1288	6.5126***
Wife's employment (part)	-.8353	-.0305	.3965			
Wife's employment (full)	-.2214	-.0078	2.6198			
Value rank agreement	-.1017	-.0244	.2384			
Management procedures	.1508	.1084	4.3735**	.1423	.1023	4.1578**
Communication	-.3369	-.0110	.5763			
Disagreement over finances	.9191	.0730	2.0537			
Satisfaction with income	.5101	.4822	79.6083***	.1482	.2017	12.1360***
Satisfaction with spouse	.5245	.1005	7.4567***	.5076	.4724	87.9208***
Constant	-1.0444			-.4625		
R^2	.50			R^2	.48	
F	15.43			F	41.70	
df	14,218			df	5,227	
p	.001			p	.001	

***p < .01
**p < .05
*p < .10

Results and Discussion

Figures A and B show the path diagrams resulting from the analysis of the trimmed version of the model. The parameters for the structural equations were estimated by ordinary least squares. These coefficients indicated the direct effect that an exogenous variable had on an endogenous variable, when the effects of other variables in the equation were controlled. The coefficients were standardized so that their relative contributions to the model could be compared. The model tested the hypothesis that income satisfaction was affected by disagreement over financial expenditures, and that income satisfaction affected marital satisfaction and satisfaction with quality of life.

From Figures A and B, it is apparent that the models for wives and husbands differed considerably. For wives, the only factors directly affecting disagreement were communication, indicating the higher the amount of communication, the lower the intensity of disagreement, and perceived future security. As future security increased, disagreement became less intense. These two factors, however, only accounted for seven percent of the variation in disagreement intensity. The remaining exogenous variables affected disagreement through their interactive effect with communication and perceived future security.

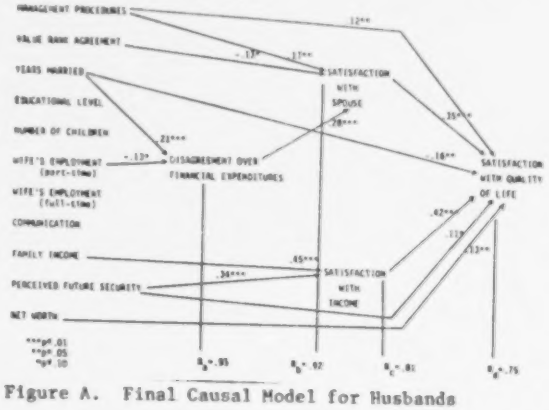

Figure A. Final Causal Model for Husbands

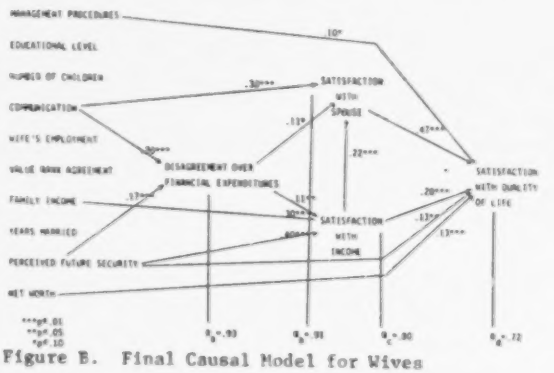

Figure B. Final Causal Model for Wives

The analysis for husbands showed two exogenous variables as predictors of disagreement. Years married was the major factor affecting disagreement; as the years of marriage increased, the intensity of disagreement declined. The other important variable was wife's part-time employment, which had been entered as a dummy variable, with the value for full-time homemakers set to zero. Therefore, compared with husbands whose wives did not work, husbands of women employed part-time reported more intense disagreement over finances. Since this was not a significant relationship for husbands with wives employed full-time, it appeared that wives' part-time employment was somewhat disruptive of the family's finances, but full-time employment was not.

In both the wives' and husbands' model, satisfaction with income was directly affected by perceived future security and family income. Disagreement affected income satisfaction negatively, but only for wives. This may have been because the wives' sample was composed primarily of full-time homemakers (137 or 55.0 percent), and part-time workers (50 or 20.1 percent), who

did not have access to independent funds to meet their own goals. Therefore, if there was a great deal of disagreement over finances, it had much more effect financially on wives than it did on husbands. The significant factors of family income, perceived future security, and disagreement over finances explained 36 percent of the variation in income satisfaction for wives, and family income and perceived future security explained 35 percent of the variation for husbands.

A smaller amount of the variation (18 percent for wives and 15 percent for husbands) in satisfaction with spouse was explained by the variables used in the path analysis. Again, some variation was seen when the husbands' and wives' models were compared. For husbands, the most important variable predicting satisfaction with spouse was disagreement over finances directly, with no links between income satisfaction and satisfaction with spouse. As disagreement intensity decreased, husbands expressed more satisfaction with their spouse. Management procedures also contributed to satisfaction with spouse directly, and, as value rank agreement increased, satisfaction with spouse did also. This model indicated that there was no relationship between income satisfaction and marital satisfaction for the husbands surveyed.

For wives, however, there was a strong link between satisfaction with income and satisfaction with spouse, and only a weak direct link with disagreement. This showed that, for the wives in this study, a large measure of their marital satisfaction was obtained through satisfaction with income, and indicated their dependency on the financial resources of their husbands. The most important variable predicting satisfaction with spouse for wives was communication, which exerted both a direct relationship and an indirect path through the endogenous variable of disagreement over finances.

The hypothesis that as income satisfaction increases, marital satisfaction increases held only for wives, but not for husbands. For this sample, there appeared to be neither direct nor indirect relationships between satisfaction with spouse and satisfaction with income for husbands.

Final models of satisfaction with quality of life for both spouses contained significant variables which predicted almost half of the variation in this endogenous variable (R^2=.43 for husbands, R^2=.48 for wives). As can be seen in Figures A and B, three exogenous variables affected satisfaction with quality of life directly for both husbands and wives, and at a similar relative importance. These were management procedures, perceived future security, an net worth.

For wives, satisfaction with spouse was the most important predictor of quality of life, with satisfaction with income as the second most important. Disagreement over finances contributed indirectly through both satisfaction with spouse and satisfaction with income. Future security exerted both a direct influence, and an indirect influence through satisfaction with income. The model indicated that much of the satisfaction with the quality of their lives for the wives surveyed was obtained from the satisfaction with their spouse.

For husbands, satisfaction with income was the most important predictor of satisfaction with the quality of their lives, and satisfaction with spouse was the second most important factor. Disagreement over finances contributed indirectly only through satisfaction with spouse. The number of years married was negatively related to satisfaction with quality of life. The more years husbands had been married, the less satisfied they were with the quality of their life.

The model of husbands reinforced the concept of the traditional family role of provider, with all of the significant exogenous variables relating to economic concerns (family income, perceived future security and net worth) linking either directly to quality of life, or indirectly to quality of life through income satisfaction. The exogenous variables related more closely to non-economic concerns (value rank agreement, management procedures, and years married), predicted quality of life either directly or through satisfaction with spouse. Disagreement over finances, as a variable, was related only through the non-economic route of satisfaction with spouse. The critical path suggests a distinct separation of two paths to reach satisfaction with quality of life, an economic route, and a non-economic route.

The model for wives also reinforced the traditional role of dependency and support. The path to satisfaction with quality of life led directly and indirectly through satisfaction with spouse for both economic and non-economic exogenous variables. For this sample of wives, non-economic factors were the most important predictors of quality of life, and disagreement over finances was related at the same strength (β=.11) both to satisfaction with spouse and income satisfaction. There was a strong link between income satisfaction and marital satisfaction (β=.22, $p < .01$), which was not found in the husbands' model. Disagreement added to the explanation of both the economic and non-economic factors related to quality of life.

Conclusions

The model developed here followed the framework of the model theorized by Ferber and Birnbaum [6]. The predictor variables for the models theorized in this study were found to be very different for husbands and wives, and therefore, the joint models proposed by the above authors would appear to have serious problems when subjected to empirical testing.

The research model predicting disagreement over finances was very significant for both sexes, although less than 15 percent of the variation in the dependent variable was explained by the variables selected. Family income and communication were significant predictors for husbands; communication and perceived future security were significant for wives.

The model predicting satisfaction with family income was very significant for both husbands and wives, with an R^2 of .38 and .39 respectively. Family income and perceived future security were the most important predictor variables for both. Disagreement over financial expenditures did contribute slightly to the prediction of income satisfaction for wives but not for husbands.

Satisfaction with spouse was the third research model. Although husbands' and wives' models were very significant, only 18 percent and 21 percent respectively, of the variation in the dependent variable, was predicted by the independent variables. Disagreement over finances was the most important predictor explaining satisfaction with spouse for husbands.

The research model predicting satisfaction with quality of life was very significant, and had a coefficient of multiple determination (R^2) of .45 for husbands and .50 for wives. Disagreement over finances was not significantly related to satisfaction with quality of life for either husbands or wives. There were some notable differences in the model between husbands and wives. In the husband's model, satisfaction with income contributed most to quality of life, while wives obtained their satisfaction with quality of life primarily through their marital relationship.

High disagreement over finances did lower both income satisfaction (utility), and marital satisfaction, for the wives in this study, but did not affect income satisfaction (utility) for husbands. This may have been because most of the wives in the sample were not employed full-time, and therefore had access to funds only through their husbands. The husbands, on the other hand, were able to use their income independently, whether or not they were satisfied with their spouse. As more married women enter the labor force each year, this relationship might be expected to change in the near future. The findings suggest that one utility function for the household is unlikely because utility is perceived differently by wives and husbands.

Theoretical implications of this study include the manner in which the household is used as the unit of microeconomic research. Because the path analysis indicated that income satisfaction was attained by a different route for husbands than for wives, a joint utility function, or joint consumption function does not appear consistent with this empirical work. The disagreement over finances which may occur during the allocation or distribution phase of the family economy, affected satisfaction with income only for wives. Those who study the family, and its economic decisions, should be aware of the dynamics of the distribution phase.

From the findings of this study, the household is not the best unit for research, as the interrelation of variables for husbands and wives appear to be somewhat dissimilar. Although income satisfaction, or utility, is an important predictor of satisfaction with the quality of life, there are significant differences in the causal model between husbands and wives.

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HOUSEHOLD EQUIPMENT--AN ANCHRONISM?

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ABSTRACT

This paper addresses the issue of whether the course, Household Equipment, is an anachronism or a vital part of home management--family economics programs. This review and critique of household equipment defines an item of equipment as any durable household good (other than clothing, furniture, and the house itself) that affects household production. This paper also suggests broadening the study of household equipment to include many previously ignored but relevant topics. Household equipment research is criticized for its narrow scope and lack of sophistication. This paper concludes that household equipment as it is currently taught and researched is probably an anachronism.

INTRODUCTION

Several years ago when my department was in a faculty load crunch, I was asked to teach a course called "Household Equipment". Although I had never taken or taught such a course before, the chair thought that because of my "technical expertise" and my knowledge of consumer economics, I would be well suited for such a teaching endeavor. To prepare this course, I thought that all I would have to do would be to examine the current texts to determine the course content and format, and review the literature to become current and to "flesh out" the course. I operated under the assumption that household equipment textbooks would generally reflect the typical outline and content of a course. I also assumed that a subject which had been around as long as household equipment would have a substantial body of scholarly literature.[2] If, as I had assumed, household equipment courses are closely related to the texts, both in format and content, I have some serious questions about the course's raison d'etre.[3]

HOUSEHOLD EQUIPMENT--A DEFINITION

My first problem with the textbooks is that I can find no definition of an item of household equipment. It appears that household equipment is defined by what the authors arbitrarily choose to include in the texts. There seems to be no standard for inclusion or exclusion. What is the rational for including sewing machines but not including power saws? Why include women's personal care appliances but not lawn mowers? Why is there usually a chapter on lighting but nothing on telephone communications equipment? The automobile, the most expensive piece of equipment owned by the family, is always neglected. I could be quite cynical and say that the only equipment that is included is that which is already in the equipment labs and it would just be too expensive to expand into other areas. Or I could say that equipment professors do not want to go beyond what they have previously learned. However, I would hazard to guess that the criteria for inclusion was established many years ago and it was at that time--any durable good (other than furniture or the house itself) that would be used in the home by a woman in her "traditional role." This definition is obviously incongruent with modern home economics.

Before continuing my criticism of household equipment texts for omissions and inconsistencies, it would be best to set forth my standard for classifying a durable good as household equipment. Since I could not find a standard either in the textbooks or in the professional literature, I have outlined my own. In this section I will define household equipment, in a later section, I will define the study of household equipment.

For the purposes of this paper, an item of household equipment may be defined as: "A durable good in the possession of the household, that when combined with human capital, results in outputs that have alternatives in the marketplace." However, unless a durable good is defined in a more narrow way than is commonly accepted by economists, this definition becomes so broad, it is almost meaningless. In economics terms, a durable good is any good that is intended to last more than one year. From the perspective of the household, that would include clothing, furniture, and the house itself. Since these items are usually covered in other home economics courses, I would parenthetically exclude them in the definition after the term "durable goods". Some economists may disagree with that exclusion, however, this less inclusive definition, does eliminate many of the problems of the currently used method of determining what is an item of household equipment. this new definition is no longer based on tradition and sexism but is tied to household production. Tables 1 and 2 show the difference as to which items of equipment would be included according to the old definition and according to the new definition.

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[2] The Lake Placid Conference on Home Economics, Proceedings 1-10, 1899-1908 lists shelter and household appliances as one of the standing committees of AHEA.

[3] A review of articles published in the 1970's and 1980's Proceedings of College Educators in Home Equipment National Conference indicates that the topics taught in the household equipment classes are similar to the content of the textbooks.

It is important to remember that the listing in Table 2 is not finite and it can be expanded to accommodate technological change.

TABLE 1 Household Equipment Traditionally Included in Household Equipment Textbooks

Food Storage and Preparation Equipment:
Ranges, microwave ovens, portable food preparation appliances, kitchen utensils, refrigerators, freezers.

Clothing Care and Construction Equipment:
Washers, dryers, irons, sewing machines.

Home Cleaning and Waste Elimination Equipment:
Dishwashers, trash compactors, vacuum cleaners, waste disposers, floor polishers.

Indoor Climate Control:
Airconditioners (room), humidifiers (room), dehumidifiers, air cleaners.

Other:
Water heaters and conditioners, lighting fixtures, personal care and comfort appliances.

TABLE 2 Suggested Additions to Equipment Traditionally Included in Household Equipment Textbooks

Communications, Education, and Information Processing Equipment:
Telephones and related equipment, personal computers, computer software, word processors, calculators, typewriters.

Safety and Home Security:
Anti-intrusion devices, alarms (burglar and fire), locks.

Tools for the Production, Maintenance, and Repair of Durable Goods:
Portable and stationary carpenter's, mechanics, electrician, and plumber's tools.

Lawn and Garden Care Equipment:
Lawn mowers, edgers, garden tractors, hedge clippers, hand operated lawn and garden tools.

Health and Exercise Equipment:
Body building machines, massagers, vaporizers scales.

Transportation Equipment:
Bicycles, motorcycles, automobiles, light trucks, recreation vehicles.

Entertainment Equipment:
Televisions, VCRs, stereo systems, video game machines.

It can easily be seen that the equipment list in Table 2 greatly expands the equipment list in Table 1. Does this mean that one would have to double the amount of time a student spends in a household equipment along with what has been traditionally studies? My answer to this is "no". I elaborate on this answer in the next section of this paper.

THE STUDY OF HOUSEHOLD EQUIPMENT

As with the definition of household equipment, the literature and the texts reveal nothing that defined the study of household equipment or the objectives for a course or courses in household equipment.[4] I am sure that people who teach household equipment have defined objectives and listed content areas, but since these are not published, on does not know what they are. Therefore, I have defined my own objectives for teaching household equipment and have listed what content I believe should be included in this course.

In my opinion, the objectives for a course in household equipment should be:

> "The study of the evaluation and acquisition of household equipment and how the use of such equipment affects household productivity and the quality of life for the individual and the family."

Under these objectives, there are glaring omissions in traditional household equipment course. They include not only the additional items of household equipment mentioned in Table 2, but also the following teaching units:

1. Public policy issues concerning the manufacturing, marketing, and use of household equipment.

2. Evaluation of the sources and content of product information emanating from industries, trade associations, private testing agencies, and the government.

3. Environmental and safety concerns in the use and manufacture of home equipment. This may include topics such as indoor air pollution and noise pollution.

4. Decision-making skills that are directed toward the determination of quality, selection, and the acquisition of household equipment.

5. The effects of ownership and use of household equipment on the non-economic quality of life of the individual and the family. This unit would be mostly conjecture since there is little or not scholarly research on this topic; however, many interesting questions can be posed.

6. Comprehensive life-cycle costing of household equipment.

7. The effects of ownership of home equipment on the quality and quantity of household production.

With the expansion of the definition of household equipment, its course objectives and with the

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[4] Several articles were reviewed that by the nature of their title would lead one to expect that the article would contain a definition of an item of household equipment or a definition of the study of household equipment. However, neither were contained in these articles. Some of the articles are listed in the bibliography of this paper.

limits of course offerings and student choice, one might wonder how all this can be taught. From my analysis of the texts, I find that much of the present content of household equipment is redundant (e.g., once the principle of cycles on major appliances is explained for dishwashers, why does it need explanation for washers, dryers, etc.), trivial (why do we need to be told the obvious fact that good maintenance expands product life), or so detailed that a student could not be expected to remember it (how long can one remember the different pH values for dishwasher detergents).

To illustrate my argument about household equipment texts' irrelevance, I have chosen to analyze the dishwasher chapter[5] in each of three popular, current textbooks. The purpose of this analysis is to determine how much of this chapter material is relevant as opposed to material that is irrelevant and/or easily forgotten. The classifications I use are as follows:

Introductory Material: The material at the beginning of the chapter that gives an overview of what is to be represented. I arbitrarily assumed this to be relevant.

Trivial and/or Obvious: The stating of facts that are so obvious or so trivial that they do not add to a person's understanding of the product. For example: "The three basic types of dishwashers-- portable, built-in, and convertible--are available with a variety of features" (3, p. 236). The text then goes on to describe the three types.

Technical Minutia: Information that is overly detailed, easily forgotten, and/or usually found in the instruction manual that accompanies the equipment upon purchase. Some examples include instruction on how to load a dishwasher, lists and descriptions of technical specifications. At most, these things need only to be listed in the appendix of a text.

Conceptual Material: Descriptions of the technical operations of a piece of household equipment, its uses and limitations, essential energy considerations, and discussions on how the equipment might affect household production and family well-being.

In addition, I also analyzed the photographs and illustrations in the dishwasher chapter in each of the texts. I classified the photographs and illustrations as either useful to understanding the concepts in household equipment, or as meaningless to the understanding of equipment. For example, in the "Useful" category I put any illustration concerning the technical operation of the various components of a dishwasher. In the meaningless category, I put the photographs of the three basic types of dishwashers that do no more than to show how the built-in, free standing, and convertible dishwasher all look a little different. Table 3 illustrates the results of my analysis.

According to the data displayed in Table 3, less than 30 percent of the content of the dishwasher chapter is of substantive value to the student. And the analysis of the photographs and illustrations also indicates a substantial amount of wasted page space. If all this less than useful information were omitted, there would be a lot more space in the chapter for the discussion of: How a dishwasher may affect family interactions; environmental concerns of the use of dishwasher detergents; opportunity costs of a dishwasher; manufacturer's emphasis on gagetry rather than function; stress caused by dishwasher noise and concern about repair and breakdown; hidden costs of owning a dishwasher (e.g. the need to have more dishes); and how a dishwasher may facilitate dual-career families. Also there would be more space in the texts for discussion of: The Magnuson-Moss Warranty Act; the value of Consumer Reports in selection of equipment (curiously the texts make little mention of the contribution of the only viable consumer product testing publication); industry influence in setting performance and safety standards for equipment; possible bias in industry distributed materials; deceptive practices in the promotion and sales of household equipment; purchasing strategies; models for determining quality; and life cycle costing of an appliance. Also, the space that is available because of the elimination of irrelevant material can be used for a discussion of the household equipment listed in Table 2.

HOUSEHOLD EQUIPMENT--IS IT REDUNDANT?

One could question if the study of household equipment is necessary at all since many aspects of this course other than some unique technical material, may be covered in other courses. This question is relevant since scarce resources (and a laboratory course in household equipment has a high cost) require prioritization of course offerings. So the question is, is the content of household equipment substantially exclusive, or is there a lot of redundancy with other course offerings?

Ideally, in order to answer this question, one would need to know the content of the household equipment course in each program along with the content of all other courses in the program. Also, one would need to know which other courses a student takes along with household equipment. Unfortunately, to my knowledge, no such data exists. The most appropriate data I could find was from a 1982 national invitational symposium, "Consumer Science in Institutions of Higher Education", held in Madison, Wisconsin. Section 5 of an addendum to the proceedings of this symposium (2) gives a general description of

[5] I chose to review Peet Pickett, and Arnold (7), and Wilson (8) since the "Report on the Special Committee on the Task Force on Future of College Programs in Home Equipment" found these to be two of the three most popular tests (7). I also selected Garrison (3) since this is a new text on the market.

basic courses included in the 27 consumer programs that were studied in depth. For the purposes of this paper, only 26 of the 27 programs were reviewed since there was inadequate information on one of the programs.

The procedures used for this analysis are somewhat rough and subjective. I reviewed the course offerings of each of the programs listed in Section 5 of the proceedings and made a list of generalized titles for Table 3. For example, rather than listing consumer economics, consumer problems, consumer education, economics for consumers, etc., I used only the generalized title of Consumer Economics. I then determined if each of the 26 programs offered such a course by reviewing the course titles and accompanying descriptions in Section 5. In the column, "Number of Offerings", I put the aggregate number of times such a course was offered by the 26 programs. For example, 23 programs offered consumer economics. Multiple offerings for a course title/description were only counted as one for each program listed. Also included in Table 4 are current and proposed units in a household equipment course. The current units are from what is traditionally in the household equipment texts, the proposed units are from the list of additional objectives I proposed earlier in this paper.

In each cell of the table is recorded an X or an O, or the cell if left blank. From a review of the course descriptions, I made a judgement as to whether a course had substantial coverage of the unit (X), or only moderate coverage of the unit (O). If I felt there was little or no coverage, the cell blank was left blank.

Not all of the household equipment content is included in consumer and related courses, therefore, physical sciences, a seemingly essential part of household equipment, was also included in the listings. Because of the nature of the data set did not include physical science courses, the number of offerings was omitted and the Xs and Os were assigned by a review of textbooks in that area.

From the data in Table 4, one can see that four content areas are covered quite thoroughly by other courses, and the remaining five content areas are covered somewhat in courses other than household equipment. Does this imply that because some of the content of household equipment is redundant, we should question the validity of offering the course? Possibly, but several important caveats must be considered. The first is the obvious limits of the data set. The programs listed, although probably the most important in the consumer field, were not systematically selected for review by the symposium. Also, the course descriptions were not always complete or accurate and as stated

TABLE 3 Analysis of Household Equipment Textbook Content for Dishwashers

Textbooks \ Content	Introductory Material	Tutorial and/or Obvious	Technical Minutia	Conceptual Material	Photographs and Illustrations: Useful	Photographs and Illustrations: Meaningless
Peet, Pickett, Arnold	9	19	56	16	39	41
Wilson	6	24	50	20	50	50
Garrison, Brasher	2	37	36	25	26	74

TABLE 4 Household Equipment Content in Other Courses

Generalized Course Titles \ Units in Household Equipment	Number of Offerings	Technical Concepts	Use and Safety	Policy Issues	Decision Making	Information Use and Evaluation	Household Production	Work Area Design (kitchen)	Family Interaction Variables
Household Equipment	9	X	X				0	X	
Consumer Economics	23			0	X	X			
Personal/Family Finance	20				0	X			
Resource Management	18				X		X		
Consumer Law/Protection	14			0					
Consumer/Family Decision Making	9				X	0			
Family Ecology/Environment	5						0		0
Consumer Issues	10			0		0			
Family Economics	15						0		
Household Energy Consumption	4		0						
Time and Human Resources	3						X		
Product Safety	2		0						
Housing	10							0	
Physical Sciences	--	X							

X = heavy emphasis

O = moderate emphasis

earlier, the classification of the courses was done rather subjectively and by one person. In addition, the definition of a consumer program is not standard. A college, department, or a division may offer related courses that may not be included in the consumer program. For example, housing may be offered in an entirely different department and not be included in the consumer program listing, thus understating the number of offerings.

Another consideration is that just because a program lists a course, it does not mean a student will enroll in it. This may be especially true of the physical science courses. A course in consumer protection may be on the books, but a student may not take it for one reason or another. Therefore, he/she may only get household equipment policy content from the household equipment course if they take it.

One could argue that it is not household equipment that is the redundant course, but that the other courses listed in Table 4 have the redundant content. Indeed, one could argue that if a student wants to get a good overview of consumer science/home management and they could take only one course, the course should be household equipment based on my proposed expanded form. Not only is the content broad, but it shows the interrelationship among the areas of consumer science and home management and the application of these concepts.

HOUSEHOLD EQUIPMENT RESEARCH

When I first examined household equipment texts, I wondered why that often read like the promotional material distributed by manufacturers or like the user instructions that accompany a product. After a review of the professional literature, I quickly became aware of one of the reasons why this is true. Where else are the authors of the texts going to find content material? It appears that household equipment is not a topic that receives much research interest, or when and if research is done, it is not usually shared with colleges through publication in major professional journals.

I made a systematic review of the contents of the Journals of Home Economics for the years 1970 to 1983 and the Home Economics Research Journal for the years 1973 to 1984. The former has six articles related to household equipment and the later has seven. Other areas of study in home economics greatly out number household equipment. Lovingood and Lytton in their 1983 analysis of household equipment research for the last 75 years found equipment research to be deficient both in quality and quantity (6). They found that in a two-year survey of home economics professional journals only 47 articles related to housing and equipment, (or less than one tenth of one percent) (6, p. 285). Also, if one is to look at the classification of housing and equipment, you usually find that most of the articles are really housing. Lovingood and Lytton also found that since 1950 there has been an average of only 55 master's degrees and four doctoral dissertations in this area reported for each decade, with the greatest productivity in the 1970 (6, p. 281). These authors go on to point out quality deficiencies as well. They include: Lack of qualified faculty doing research; a decline in the number of graduate programs in household equipment; a lack of sophistication in research conceptualization probably due to the fact that most research is done by master's students or faculty members whose primary mission is teaching; a lack of an interdisciplinary nature of the research/research that is not disseminated widely; difficulty in identifying household equipment research; a lack of additivity and consistency in methods of study; and an individualized nature of the studies that renders them so distinct that generalizations can rarely be drawn (6).

Maybe this lack of quality in research is one of the reasons that as Lovingood and Lytton found, that the household equipment texts seldom cite academic research (6). If the text authors are not getting their content material from academic research and for some reason unknown to me, appear averse to citing the relatively objective Consumer Reports, I can only assume the text book authors must be getting much of their information from industry sources. Although industry sources might be quite appropriate for technical information and for a description of what products are on the market, they must be viewed as a source of information that by its very nature creates a conflict of interest. Industry's primary purpose is to sell its products, no necessarily to improve household production or the level of living.

Technical data from industry may be fine for showing how a trash compactor works, but can we really rely on industry sources to give us an unbiased view of the advantages of owning an appliance that Consumer Reports once called a $200 appliance that turns twenty pounds of trash into 20 pounds of trash. Of the three text books I examined for this paper, each seemed to take an uncritical and often positive view of the benefits of the trash compactor, whereas, some of the positive benefits may be in dispute. Another example of apparent industry influence appears in Peet's text (7, p. 233-234). It includes a sweeping statement about the benefits of a home freezer to families. Even though the authors indicate this statement is from American Home Appliance Manufacturer's Association, the reproduction of the statement without critical analysis or comment appears to give unqualified endorsement to a less then accurate statement. I must question whether we professionals should be the conduit for the sales promotion of household equipment.

Lovingood and Lytton classified the household equipment research subsequent to 1950 into three categories (6):

Tests of performance--comparisons of outputs or products; what happens within the appliance during operation.

Development of specifications--basic research conducted to discover new appliances or appliance features.

Space requirements (including body mechanics)--the space necessary for storing and using an appliance; body movements required as a person uses an appliance.

According to my expanded definition of an item of household equipment and definition of the study of household equipment, the research that is being done is quite narrow in focus. Although items of household equipment are not designated in the classification, according to Lovingood and Lytton's article, most, if not all the research addressed what has been traditionally designated as an item of household equipment. The classifications themselves exclude topics such as public policy, environmental concerns, decision-making skills, etc. In summary, I believe that household equipment research has a long way to come before it can make a substantial contribution to the field of home economics.

SUMMARY AND CONCLUSIONS

The limitations of this paper are obvious. The primary one being that it is based on the assumption that the format and content of household equipment courses are similar to the content and format of the textbooks. Also, the analysis was generally subjective and based on the biased views (although unintentionally) of the author. Yet beyond the analyses and discussion of this paper, other authors have openly criticized the study of household equipment, especially its research. Household equipment is not a growing area in home economics (5) (6) (7) and this is probably due to its static state, a a state that does not induce new blood and/or new ideas.

If household equipment is currently defined and taught so it is restricted primarily to the format and content of current household equipment textbooks, it probably is an anachronism. Household equipment texts and household equipment courses need redefinition and more research needs to be done in this area if it is to have a viable place in home economics.

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ECONOMIC PRESSURES ON WOMEN: UPDATE

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Abstract

This paper is an update of one presented in 1980. Data are synthesized to portray the economic pressures experienced by women. Areas highlighted include: educational level, income, labor force participation, level of attachment to the labor force, income security, single parent families, and use of time. In general, there has been little progress in reducing the economic pressures women experience. From numerous possibilities, several implications for educational programs and public policies are suggested.

"Women represent one-half of the world's population. They provide two-thirds of the world's total work hours. They earn one-tenth of the income, and they own one one-hundredth of the property" (20). With those comments we introduced the topic of economic pressures on women in the paper we prepared for this group in 1980.

In four years the overall picture has changed little. For some specific pressure areas percentages have shifted slightly. Data confirm that women experience the same pressures as were reported in 1980 and that trends begun before that time are continuing at a very modest pace.

In this paper we have summarized the significant data and updated that for which information is available. We have repeated data germane to identifying economic pressures and trends. New developments are highlighted. Implications for education and information programs are presented.

Economic Status of Women

The Urban Institute report entitled The Subtle Revolution projected that by 1990 the average woman in the United States whether married or unmarried would spend 25 years of her life in jobs outside the home (13). This is more than one-half of adult life using current retirement patterns. They also projected that 55% of American women over 16 years old would be on the job in 1990 and that 42% of American workers would be women. By 1980 those projections were met in the second case and well on the way to being met in the first case. More recent projections indicate that by 1995, 61% of working age women will be in the labor force (6).

Of all women (21 to 64 years) who had ever worked, 64% had one or more work interruptions in excess of six months for family reasons. This is in contrast to 1.5% for men. Other reasons for work interruptions--unemployment or illness/disability--affect fairly similar portions of men and women. One-quarter of men and 72% of women experience work interruptions when all reasons are considered (12).

Education

Women's educational levels are increasing. Data for 1982 indicated that 14% of women and 22% of men over 25 years had completed four or more years of college. More women (41%) than men (34%) have at least four years of high school (15, p. 146). According to one report the largest change has been in the number of women 35 and older (4). Of this group of college students, 87% were part-time enrollees (15, p. 162). In graduate programs between 1970 and 1978, there was a 103% increase in first year graduate enrollment for women (14). In the period 1970 to 1978 the number of earned masters degrees increased 82% for women and 33% for men. Subsequently (1978 to 1981) the number of masters degrees for men declined nine percent and for women it declined one percent. The number of women earning doctorates increased 155%. For men, the number of doctorates declined 12% from 1970 to 1981. Put another way, women earned one of 7.5 doctorates in 1970, 1 of 3.8 in 1978, and 1 in 3.2 in 1981 (15, p. 168).

Increased educational attainment should improve women's chances of obtaining higher paying jobs. This may be true in individual cases, but, unfortunately, high paying jobs are often linked to specific fields and although women are attending college in increasing numbers, many continue to study in traditionally lower paying fields such as education, liberal arts and humanities or to return to geographic areas with limited advancement opportunities. According to the Urban Institute report female college graduates including those with advanced degrees have earnings throughout the life cycle that are less than male high school graduates (2). Using regression analysis Salvo and McNeil found that 32.4% of the male/female earnings gap was explained by work experience, non-family interruptions and education for employed persons over 30 (12).

Income

Although women have high levels of educational attainment, income remains low. The gap between men's and women's earnings has changed a little. In 1977, for full-time, year-round workers, women's income was 58% of men's (14). In 1983, median income for full-time male workers was $22,508 and for women $14,479; 64% of men's (17, p. 12-13).

When occupational groups are examined, the earnings gap between women and men does not appear to be much different. As of March 1982, among salaried professional, technical and kindred workers, women's earnings were 64% of men's earnings (15, p. 434), a change from 54% in 1977 (14).

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Entrance into nontraditional fields and/or management positions does not assure higher initial or higher lifetime earnings. Early data indicated improved initial earnings but erosion of this as years of employment increased (2). In a highly technical field, electrical engineering, one does find an earnings gap even when more than one-half of those surveyed were under 30. The younger women (20-29 and 30-39) earned 87% of what their male counterparts did. For women electrical engineers aged 40-49 and over 50 the difference was about $8,000 per year and their salaries were 82% of men's (1).

In 1972, women owned 4.6% of all firms and they received .3% of all receipts (14). Women's ownership had changed to 7.1% of all firms and 6.6% of total receipts by 1981 (15, p. 534).

Lifetime earnings are a function of income level and years of employment--foremostly, continuous employment. For males, the lifetime earnings line rises steadily from occupational entry until they are in their mid-forties. For women, this same line rises much less dramatically and peaks at about age 30 (7). For women who do not interrupt their careers, earnings are only 56% (for married women) to 57% (for never married women) of that of men.

A 10-year interruption of employment reduces the lifetime earnings of women by 18% for high school graduates and by 21% for college graduates. If a woman leaves the labor force at the birth of the first child (compared to non-interruption), the reduction is 57% for the high school graduate and 50% for the college graduate (7). For women interrupting work for family reasons, the mean duration of the interruption is 9.5 years. The length of unemployment and illness/disability interruptions are shorter (1.2 and 4.3 years respectively) and only slightly longer than for men (1.1 and 3.3 years) (12, p. 7).

The picture is similar whether the individual, their occupation and worklife or the income status of the household is examined. Women as individuals and household heads experience less income. In 1982, households with male heads over 64 had an average income of $21,562 while female headed households had a mean income of $17,924 (18, p. 91). The female headed households mean income is 83% of the male headed group. The differential is greater when the householder is 45 to 64 years old--$34,933 (males) and $19,227 (females)--55%.

Employment: Labor force participation

We know that women are participating in the labor force at a much greater rate now than they have in the past. The labor force participation rate for all women of working age in 1900 was 20%, by June 1979 it had reached 51% and in 1982 it reached 53%. In 1982, women made up 48% of all workers (15, p. 407). In recent years, the most dramatic increase has occurred for never married women, 63% more were in the labor force in 1982 than in 1970. For divorced women the increase for the same period was 53% and for married with spouse present the increase was 37% (15, p. 409).

Employment: Level of attachment to the labor force

Most women work full-time. Many women are multiple job holders. In 1969, 16% of multiple job holders were female (11). That figure had increased to 38% in 1980 (15, p. 414).

In 1980, 5.8% of all men 16 and older were multiple job holders, a drop from 7.0% in 1970. In contrast, in 1980 3.8% of women were multiple job holders up from 2.2% in 1970 (15, p. 414).

Occupational group

Of all workers, women have the largest concentration among clerical workers and the smallest among craft workers, non-farm laborers, and farm workers. In 1972, women comprised 38% of all professional/technical workers but were only 18% of managerial and administrative workers. They were 98% of all private household workers. In 1982, these figures had changed to 45% of all professional/technical workers, 28% of managerial/administrative workers and 97% of household workers (15, p. 419).

There had been little change between 1950 and 1978 among professional and technical workers as to the proportion who are women. Looking at selected occupations, within that group, for college and university teachers, women made up 23% in 1950, 32% in 1979 and 35% in 1982 of the total. However, among engineers women were 1.2% in 1950, 2.9% in 1979 and 5.7% in 1982. Among physicians and osteopaths, women were 6.5% in 1950, 10.7% in 1979 and 14.6% in 1982. Women were 98% of all nurses in 1950, 97% in 1979, and 96% in 1982 (1950 and 1979 data: 16, p. 10; 1982 data: 15, p. 419).

Income security

Women's low income levels and their labor force participation patterns limit their access to and use of income protection devices and retirement income plans. In and out employment patterns reduce eligibility for pensions (private and public) as well as benefit levels. According to Lopata and Norr, "substantial numbers of younger women expect to depend heavily on social security benefits for retirement income and expect to be economically dependent on their husbands in retirement" (8, p. 6). The critical connection between dependency and/or labor force participation and opportunity was a more important concern to "formerly married women who appeared to have both higher retirement needs and greater concern about present (social security) policy" (8, p. 7).

About 65% of all adult women and 68% of all wives now have some life insurance. Recent increases in the proportion of insured women have been due to increases in coverage by employee group plans. According to the American Council of Life Insurance, in 1976, insured wives had higher levels of coverage for all types of insurance, $8,470, than did all insured women, $7,680. In the same year 64% of female household heads were covered by life insurance but the average amount, $7,210, was lower than for wives or for all insured women (10).

In 1978, married women were most likely to be covered by health insurance with 81% having coverage. Divorced or separated women were at greatest risk with only 55% having coverage. It is striking that this most vulnerable group was even less likely to have health insurance if they had children under 18. Fifty-one percent of women who had children under 18 were covered (19).

Single parent families

One in five children under 18 were in a mother only family in 1982 (14, p. 53). One-half of single parent, female headed families were below the poverty level in 1981 (15, p. 473). Rarely do families headed by fathers face the economic pressures experienced by female headed families. Nearly three times as many families headed by women as all families were below the poverty level. Although mothers who maintain families are more likely than those who are in two-parent families to be in the labor force (72% compared to 56%), they experience more unemployment. In 1982, females who headed households had an unemployment rate of 11.7% compared to 6.3% for married mothers (15, p. 413). The labor force participation rates had increased for both groups from 1978 to 1981 as had unemployment rates.

Median family income (March, 1982) in female headed households ($11,441) was 46% of that of two parent families ($25,106). In contrast, the median family income in male headed single parent families ($20,542) was 82% of that of two parent families (15, p. 461). Single parent families headed by a working mother had an average income, in 1981, of $10,960. This was 55% of that of single parent, male headed families ($19,889) and 37% of that of two parent families with working mothers ($29,247) (15, p. 466).

The data indicate that divorced women are especially vulnerable to income pressures. Only 46% of those who are awarded alimony and 47% of those awarded child support collected regularly according to the National Commission of the Observance of International Women's Year. Furthermore, some 10 years after divorce, few women (21%) are receiving the child support they were awarded (3; 4).

In 1981, 74% of the currently divorced women who were due child support received some payment. Remarried and single women were less likely to receive payments due them (67 and 63% respectively). The annual average income for those currently divorced women was $14,230 if they received child support. For those who did not receive the child support due, annual income was 31% less ($9,787). For currently divorced women below the poverty line 48% received an average of $1,466 in child support. Younger women (under 30) who had support payments due them in 1981 were less likely to receive them--62% did. Seventy-six percent of the women 30-39 years received due support payments. The mean income of the former group was 65% of the latter group ($8,074 and $12,494 respectively) (15, p. 397).

Time

Historically, time studies have shown the trends in quantity of time spent by women in household production as well as in the division of labor that is apparent among family members. One study has indicated a reduction of 20% in total time spent in household work from 1965 to 1975. However, women continue to be responsible for 80% of the housework including family care. The amount of time women were in the labor force was a limiting factor on the total time spent in household work. Husbands' allocation of time was most related to the wives' average hourly earnings (as earnings of wives increased, the husbands' time in household work increased) (9).

The essence of the conclusions of the time studies is summarized in the comment that women "are confronted not with a choice of whether to do the housework or market work (or the farm work), but whether to do market work in addition to housework (and the farm work)" (7, p. 16). The tradeoffs available between time and money are limited by current time allocations and divisions of labor.

Implications

With slow changes in trends, educators and the women who are part of the trends need to be aware of what is and what is not happening. Personal decisions and public policy remain as major factors in easing the plight of those women and their families who find or may find themselves in the lower percentiles of income for their cohort group.

The following implications provide the basis for questioning current programs and developing new programs to inform and educate various audiences. First, considering the facts and the slow and often erratic change in economic pressures, are women adequately prepared with compensatory alternatives or provided a level of protection through private and public policies? Will the fact that the number of women attending college surpassed that of men in 1979 (15, p. 141), make a difference that women's record of high school graduates has not made? Second, it has been 21 years since the 1963 Equal Pay Act. The earnings gap has narrowed little. Closing the gap at an optimistic rate of one-half of one percent per year, it will take 72 years or until 2056. The recent debates on "comparable worth" are inconclusive as to whether enactment of such laws would hasten progress. It is highly controversial and is likely to be in the courts for years. Much study on this issue is needed to ascertain its costs and benefits. Valuing various occupations and their contributions to society is a tremendous challenge. When one considers that even within occupations equity has not been achieved, can we expect it to be across occupations? Thirdly, with women concentrated in lower paying occupations, having work life interrupted by family needs and most often faced with family responsibilities at divorce or death, what actions can the individual take to lower vulnerability? What combination of occupation, work life history and marriage dissolution protections will ease the burden? What is the responsibility of the two earner family to buffer the economic future of their own members? Next, on August 24

of this year President Reagan signed the Retirement Equity Act of 1984. This legislation is to eliminate sex discrimination in employee retirement plans and give spouses broader entitlements to survivor's benefits. Effective January 1, 1985, the employee's signature must be accompanied by that of the spouse before survivor's benefits can be waived. Will this and other provisions assure greater economic security to women as retirees and as surviving spouses? What education efforts are needed to effect optimal decisions as to the dispensation of retirement benefits and timing of work life interruptions?

Other implications can be drawn from the synthesis of the preceding data. This up-dated outlook on the economic pressures faced by women highlights limited progress and suggests that tremendous educational, policy and research efforts are needed to benefit society, women and their families.

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A COMPARISON OF TWO PERSONAL FINANCIAL MANAGEMENT PROGRAMS "DOLLARS AND SENSE" AND "HOME ACCOUNTANT PLUS" FOR THE IBM® PC

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Abstract

"Dollars and Sense" and the "Home Accountant Plus", two personal financial management programs, are compared. Both have extensive record-keeping and management capabilities suitable for families with several accounts or a small family business. The study showed that the "Dollars and Sense" operates more efficiently and has more capabilities than the "Home Accountant Plus", but either can be used satisfactorily.

Introduction

Personal financial programs for home computers range in capabilities from simply balancing checkbook to a complete financial management program. Prices range from $40 to $200. Potential users must weigh desired features against costs as well as hardware compatibility.

The complexities of learning how to use the product, the completeness of the money management program, ease of making corrections, and anticipated company support are other considerations.

The following features and their functions are generally found in a complete financial management program:

1. Cash transactions. Record all checking, saving, automatic charges, transfers and deposits.

2. Automatic bill-paying. Identify bills which are paid at regular intervals, adjust checkbook balances and make entries in appropriate budget and tax categories. Examples are mortgages and installment payments.

4. Check-writing. Compute and write checks based on user-entered information. Deduct amounts from budget categories. Provide running balances.

5. Reconcile bank statements.

6. Automatically updates every account affected by entries.

7. Income tax. Identifies income tax deductibles.

8. Search. Retrieves specific stored information. ie. finding total automobile expenses for 6 months by locating checks, credit charges and cash payments for six month period.

These programs do not fill out income tax returns or monitor stock investments.

This paper compares similarities and differences between two personal finance programs, "Dollars and Sense" and "Home Accountant Plus" IBM® version. Both claim to manage home finances effectively, and are readily available at specialized computer software outlets.

Assumptions

The following assumptions are made:

1. An IBM®PC, IBM® compatible or Apple II series computer is available.

2. User's financial record-keeping requires more than one checking account such as personal and professional accounts and more than one deposit accounts such as rental income, money market, or mutual funds.

Features Of The Programs

The "Home Accountant Plus" and the "Dollars and Sense", the two most popular home financial management program for the IBM® and IBM® compatibles are compared in Table I. Both programs require regular data entry by the user. Both are helpful at income tax time for those who itemize deductions. The programs handle cash transactions of income, expenses, assets and liabilities and continuously balance all accounts including checking accounts. Both search for information on the basis of check number, category, date, payee, or other information.

The "Home Accountant Plus" handles 25 automatic bills per month, 5 separate checking accounts, and 100 budget categories. The "Dollar and Sense" has the capacity to carry 100 automatic bills, 12 checking accounts and 120 budget categories.

Both have check-writing and checking-account splitting capabilities. Account splitting means one check is written for two or more separate budget categories. Bank credit card is an example.

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TABLE I

COMPARISON BETWEEN "DOLLARS AND SENSE" AND "HOME ACCOUNTANT PLUS"

FEATURES	"DOLLARS AND SENSE"	"HOME ACCOUNTANT PLUS"
Compatible Hardware	IBM® PC, XT, PC, JR. Apple II Series TI Prof	IBM® PC, XT, PC, JR. Apple II Series, Osborne 48k TRS-80, Model III, 4, Atari 800
Manufacturer	Monogram, 8295 S. La Cienega Blvd. Inglewood, Ca. 90301 (213) 215-0529, (800) 645-3355	Continental Software, 11307 S. Hindry Ave., Los Angeles, Ca. 90045 (213) 410-3977
Retail Price	$165 for IBM® PC	$150 for IBM® PC
User Manual	131 pages, tabbed	175 pages, untabbed
Warranty, 90 day limited	yes	yes
Copy Protected	yes, $20 for back-up diskette	no
Customer Support by phone	yes, for registered owner	yes
No. of transactions/diskette	4000	1000
Transactions viewed on screen at one time	Maximum 15 per screen	One per screen
Data entry	Line entry like checkbook	One entry per screen
Cash transactions Automatic bill paying Automatic account balances	yes yes yes	yes yes yes
Budget Categories	120	100
Maximum No. of checking accts.	12	5
•Check writing •Check splitting •Running bank balance	yes yes yes	yes yes yes
Income tax	14 accounts. Does not interface with tax program	Identified only Interfaces with tax program
Household inventory	yes, keeps running total	no
Prints reports Prints graphs	yes. Displays on screen yes. Bar graph	yes. Does not display on screen yes. Bar graph and line graph
Correction of previously entered data	One-step operation	Three-step operation

Fourteen separate income tax accounts are possible with "Dollars and Sense" but are only flagged for identification on the "Home Accountant Plus". Itemized household inventory record is possible only with "Dollars and Sense".

Both print financial statements. "Home Accountant Plus" prints, but does not show reports on the screen. Included are monthly and year-end reports, balance sheet, assets, liabilities, net worth, income statement and checking accounts. Dollars and Sense" produces quarterly reports, "Home Accountant Plus" does not, but does print separate credit card activities.

Both print bar graphs for comparing accounts and reports. "Home Accountant Plus" prints line graphs to show trend.

Omissions and errors are easily corrected on the "Dollars and Sense" by making a simple entry of the new data, but corrections on the "Home Accountant Plus" after a new month is started requires several steps. A dummy account is first set up, and then corrections are entered using the "edit" function.

Initial Start-up and Data Entry

"Dollars and Sense" is easier to learn. The tutorial diskette gives first-time user a choice of operating automatically, or interactively where user participates with the program. The User's manual offers sample budget categories for personal, business or income tax accounts. Data entry is simple. Line entries are made using the checkbook format. Up to fifteen entries can be made on one screen. Data entry can go back in time if an omission occurs. All entries are listed as asset, check, liability, income, or expense and are followed by the description and dollar amount.

The first-time user of "Home Accountant Plus" must follow the manual precisely. The manual illustrates the screen at each step. The initial budget set-up is time-consuming. Initially when setting up an account or entering data, one entry is made per screen. The user must return to the menu to call another account on the screen to enter another piece of data. Each entry is made by filling a separate form. All entries are first classified as assets, credit cards, liabilities, income or expense, then the description and dollar amount are added to complete the entry. The program interfaces with an income tax program using the same data.

Conclusion

Both programs help manage home finances with detailed records for those who need programs that manage several checkbooks and several deposit accounts and also provide a balance sheet and net worth statement. The "Dollars and Sense" is simpler to use than the Home Accountant Plus. The "Home Accountant Plus" is less expensive, the manual is less organized, but it does produce line graphs which show trend, and does interface with a separate income tax program. The program is reliable, comprehensive, and after the initial set-up is completed, the program can be used to manage family finances effectively.

Either program may promote more effective record-keeping by families. Both aid families with complicated financial programs, and are especially valuable when income tax reports are being prepared. Considering the long-term investment in the software, the "Dollars and Sense" appears to be a wiser choice. The line entry method, the separate income tax categories and household inventory makes the "Dollars and Sense" a more efficient and complete package. The power may be excessive for those who maintain one checkbook and a simple budget record.

New programs for family financial management are emerging regularly, and improvements in the "Home Accountant Plus" and "Dollars and Sense" are constantly being made. In fact, two additional similar and powerful programs are available, and an improved version of the "Dollars and Sense" has been marketed since this study began.

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